DEVELOPMENT

STORM WATER MANUAL

for development & redevelopment projects

march 2010

CITY OF CHULA VISTA

YOUR COMMUNITY. YOUR ENVIRONMENT. YOUR CHOICE

DEVELOPMENT STORM WATER MANUAL

March 2010

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Note:

This Manual is updated approximately every five-years concurrent with the re-issuance of the National Pollutant Discharge Elimination System (NPDES) Municipal Permit for San Diego County, or as required by said Permit. During the life of this Manual, changes in regulatory requirements, technological advances in available Best Management Practices (BMPs), or better assessment of BMPs' effectiveness may result in changes in the City's requirements. These changes may not result in an update of this Manual; however, the City of Chula Vista reserves the right to impose additional requirements when necessary to assure compliance with NPDES regulations. Any fundamental changes to the Manual will include public participation. The City maintains final discretion for the approval of project submittals. For the latest requirements please contact the City of Chula Vista Public Works Engineering or Public Works Operations, Storm Water Management Section.

Abbreviations

ADT	-	Average Daily Traffic
BAT	-	Best Available Technology
BCT	-	Best Conventional Technology
BMPs	-	Best Management Practices
CASQA	-	California Storm Water Quality Association
CC&Rs	-	Covenants, Conditions, and Restrictions
CSWMP	-	Construction Storm Water Management Plan
CVCS	-	Chula Vista Construction Standards
CWA	-	Clean Water Act
CWC	-	California Water Code
DCIA	-	Directly Connected Impervious Area
ESA	-	Environmentally Sensitive Area
HMP	-	Hydromodification Management Plan
HOA	-	Home Owner Association
IHC	-	Interim Hydromodification Criteria
IMP		Integrated Management Practices
IOMP	-	Inspection, Operation, and Maintenance Plan
IPM	-	Integrated Pest Management
JURMP		Jurisdictional Urban Runoff Management Program
LID	-	Low Impact Development
MEP	-	Maximum Extent Practicable
MS4	-	Municipal Separate Storm Sewer System
MSCP	-	Multiple Species Conservation Plan
NOI	-	Notice of Intent
NOT	-	Notice of Termination
NPDES	-	National Pollutant Discharge Elimination System
PDP		Priority Development Project
RGO	-	Retail Gasoline Outlet
RWQCB	-	Regional Water Quality Control Board
SIC	-	Standard Industrial Classification
SUSMP	-	Standard Urban Storm Water Mitigation Plan
SWMFs	-	Storm Water Management Facilities
SWPPP	-	Storm Water Pollution Prevention Plan
SWRCB	-	State Water Resources Control Board
WDID	-	Waste Discharge Identification
WQTR	-	Water Quality Technical Report

SECTION 1. INTRODUCTION PAGE

SECTION 1. INTRODUCTION

The City of Chula Vista Development Storm Water Manual (Manual) is intended to provide information to applicants for development, redevelopment, and public projects processed through the City of Chula Vista (City) on how to comply with the permanent and construction storm water requirements. This Manual further guides the project applicant through the selection, design, and incorporation of storm water Best Management Practices (BMPs) into the project's design plan. The underlying authority for requirements included in this Manual are derived from the National Pollutant Discharge Elimination System (NPDES) Municipal Permit, Order No. R9-2007-0001 (Municipal Permit), the City of Chula Vista Standard Urban Storm Water Mitigation Plan (SUSMP), and Chula Vista Municipal Code Chapter 14.20. All provisions of this Manual apply equally to private and public projects.

Section 1, "Introduction," provides storm water pollution prevention background information and legal or regulatory requirements associated with storm water pollution control.

Section 2, "Project Review and Permitting Process," outlines the project plan review and approval process for private and public development and redevelopment projects. Applicants should use Section 2 as the roadmap to navigate through this Manual and ensure storm water requirements are accurately and efficiently incorporated into their projects during project review.

Section 3, "Standard Urban Storm Water Mitigation Plan (SUSMP)," lists the permanent storm water BMP requirements for Priority Development Project categories as defined in Section D.1.d of the NPDES Municipal Permit, Order No. R9-2007-0001. This Section includes Low Impact Development Site Design, Source Control, Treatment Control, and Hydromodification Management requirements for development and redevelopment projects.

Section 4, "Water Quality Technical Report Guidelines," includes a checklist of specific information to be included in a Water Quality Technical Report and minimum requirements for the preparation of such reports.

Section 5, "Best Management Practices Design Criteria," provides information on national and regional standards for the design and implementation of construction and permanent BMPs. Although design criteria referenced in this section are generally acceptable to the City of Chula Vista, the City reserves the right to exercise sole and ultimate discretion regarding the final approval of BMPs.

Section 6, "Standard Permanent Best Management Practices," provides information on permanent BMP requirements for those development or redevelopment projects that are not Priority Development Projects and do not need to prepare Water Quality

Technical Reports. Such projects, however, are required to complete applicable forms and implement permanent BMPs, as described in Section 2.

Section 7, "Construction Storm Water Performance Standards," describes the City's storm water standards for the construction phase of the development projects. It also includes the Advanced Treatment (also known as Active Treatment) Requirements.

Section 8, "Implementation and Maintenance Requirements," describes requirements for the implementation and maintenance of construction and permanent BMPs for all development and redevelopment projects, including execution of a maintenance agreement with the City of Chula Vista, when applicable.

Section 9, "Definitions," is a list of terms used throughout this Manual and their definitions.

Section 10, "References," provides a list of national and regional references for planning and designing Best Management Practices for development projects. Each reference is provided with a web link for easy access.

1.1 Background

Urban runoff discharged through municipal storm drainage systems has been identified as one of the principal causes of water quality problems in most urban areas. City of Chula Vista's storm drainage system, which collects urban runoff and rainwater from streets, rooftops, driveways, parking lots, and other impervious areas, discharges to local channels, creeks, rivers, and San Diego Bay mostly without treatment. In Chula Vista, storm drainage systems are separate from sanitary sewer collection systems.

Urban runoff potentially contains a host of pollutants, such as trash and debris, bacteria and viruses, oil and grease, sediment, nutrients, metals, and toxic chemicals. These contaminants can adversely affect receiving and coastal waters, flora and fauna, and public health. Urban runoff pollution is not only a problem during rain events, but also during the dry season when some urban water usage such as landscape over-irrigation or car washing runoff find their way into drainage systems.

Construction and land development activities significantly alter drainage patterns and contribute pollutants to urban runoff primarily through erosion, the removal of existing natural vegetation during construction, and the creation of new impervious surfaces, such as parking lots, which often permanently contribute pollutants throughout the life of the project. When homes, work places, recreational areas, roads, parking lots, and structures are built, these new impervious areas prevent the natural landscape's ability to infiltrate and cleanse storm water and urban runoff.

As impervious surfaces increase, water that normally would have percolated into the soil, where it can be naturally filtered, now flows over the land surface directly to

downstream drainage systems, channels, creeks, rivers, and other receiving waters. Accordingly, increases in impervious cover can increase the frequency and intensity of storm water runoff. Runoff from new impervious surfaces often becomes a carrier for pollutants such as automotive fluids, cleaning solvents, toxic or hazardous chemicals, detergents, sediments, metals, pesticides, oil and grease, and food wastes. Increased frequency and intensity of runoff may lead to downstream erosion or impact to sensitive habitat.

Pollutants that often temporarily remain on impervious surfaces during dry periods are transported to storm drainage systems by storm water and urban runoff. These pollutants flow untreated through storm drainage systems and, ultimately, into channels, creeks, rivers, and other receiving waters. With the growing concerns of urban runoff and storm water pollution, local, state, and federal agencies have established regulations preventing non-storm water discharges and requiring development planning and construction controls to treat storm water from new development projects before discharging to public storm drainage systems or receiving waters.

On January 24, 2007, the San Diego Regional Water Quality Control Board (Regional Board) re-issued the Municipal Permit to the Copermittees (the County of San Diego, the Port of San Diego, the San Diego County Regional Airport Authority, and the eighteen other cities in the region). The Municipal Permit requires the Copermittees to develop and implement storm water regulations that address storm water pollution issues in development planning and construction associated with private and public development projects.

Pursuant to the Municipal Permit and this Manual, which is incorporated by reference in Chula Vista Municipal Code Chapters 14.20 and 15.04, Private and public development projects are required to include storm water BMPs during construction and in the projects' permanent design to reduce pollutants discharged from the project site to the Maximum Extent Practicable (MEP). The primary objectives of this Manual are to: (1) Effectively prohibit non-storm water discharges; and (2) Reduce the discharge of pollutants to and from storm drainage systems to the MEP statutory standard, both during construction and throughout the life of a development project.

To address pollutants that may be generated from new Priority Development Projects once the site is in use, the Municipal Permit further requires the City to establish a series of permanent BMP requirements that are described in the Chula Vista Standard Urban Storm Water Mitigation Plan (SUSMP), included in Section 3 of this Manual.

This Manual is intended to provide general information on how to comply with the City's construction and permanent storm water BMP requirements, including the SUSMP requirements, for private and public development projects. All development or redevelopment projects that obtain their Grading, Construction, or Building Permit, or any other required development permit on or after March 24, 2010, are required to comply with the requirements of the NPDES Municipal Permit, Order No. R9-2007-0001

and this Manual. All other development or redevelopment projects that have obtained their Grading or Building Permits prior to March 24, 2010, are required to comply with the requirements of the NPDES Municipal Permit, Order No. R9-2007-0001 and the City of Chula Vista Development Storm Water Manual dated January 2008.

1.2 Legal Framework

The requirement to implement storm water BMPs on development projects is based on Section 402 (p) of the Clean Water Act. The Federal Clean Water Act amendments of 1987 established a framework for regulating storm water discharges from municipal, industrial, and construction activities under the NPDES program. The Federal Clean Water Act requires municipalities throughout the nation to obtain coverage under Municipal NPDES Permits for discharges of urban runoff to waters of the United States. The primary goal of the Municipal Permit is to prevent polluted runoff from entering storm drainage systems and local receiving and coastal waters. In California, the State Water Resources Control Board (SWRCB), through the nine Regional Boards, administers the NPDES storm water municipal permitting program.

Pursuant to the Municipal Permit issued by the Regional Board, the City is required to establish construction and permanent storm water BMP requirements addressing pollution from private and public development and redevelopment projects.

SECTION 2. PROJECT SUBMITTAL REQUIREMENTS PAGE

SECTION 2. PROJECT SUBMITTAL REQUIREMENTS

City of Chula Vista Municipal Code Section 14.20.120.A. makes it unlawful for any person not to comply with Best management Practices (BMPs) and pollution control requirements established by the City or other responsible agency to eliminate or reduce pollutants entering the City's storm drainage systems. It further provides that BMP requirements shall be complied with throughout the life of the activity. These storm water pollution prevention requirements, which are described in detail in the following sections are site specific and vary based on the project's potential impact on receiving water quality. The following procedures describe elements of the plan review and permitting processes for storm water BMP requirements. Figure 2.1, "Review and Approval Process for Development and Redevelopment Projects," demonstrates how construction and permanent storm water requirements are incorporated into projects requiring subdivision approvals, development permits, construction permits, or other approvals.

Public projects are also subject to the requirements of this Manual. This Manual is designed to address private development projects, projects by other public agencies, and the City' Capital Improvement Projects alike.

2.1 Determine Applicable Storm Water BMP Requirements

Prior to permit application submittal, applicants must complete applicable Forms 5500 through 5504A, included in Section 2.6, "Applicability Checklists and Forms", to determine their project's permanent and construction storm water BMP requirements. These forms must be completed for all permit applications, even if previous approvals exist. Projects that obtain their Grading, Construction, or Building Permit before March 24, 2010, are required to comply with the requirements of the NPDES Municipal Permit, Order No. R9-2007-0001 and the City of Chula Vista Development Storm Water Manual dated January 2008. Projects that obtain their Grading, Construction, or Building Permit on or after March 24, 2010, are required to comply with the requirements of the NPDES Municipal Permit, Order No. R9-2007-0001 and this Manual dated March 2010. The applicable forms must be completed, signed by the responsible party for the project, and submitted to the City with the permit application. For private projects, the project design must include all required permanent and construction BMPs in order for the application package to be deemed complete. For public projects, all required permanent and construction BMPs must be incorporated in the project design and the City project manager will be responsible to ensure that all permanent and construction BMP requirements are met.

2.1.1 Permanent Storm Water BMP Requirements

All development projects must include permanent control measures to reduce the discharge of storm water pollutants to the Maximum Extent Practicable (MEP). Compliance standards are different for Priority Development Projects and Non-Priority

Development Projects. Non-Priority Development Projects shall meet Standard Requirements described in Section "a" below, while Priority Development Projects are required to comply with Section "b".

a. Standard Requirements. Projects subject to Standard Requirements (projects that are not Priority Development Projects) must incorporate all applicable permanent BMPs included in Form 5501 and Section 6 of this Manual "Standard Permanent Best Management Practices" into the project design. Refer to Section 2.2, "Prepare & Submit Appropriate Plans," for guidance in the BMP design process.

Applicants for such projects shall complete, sign, and submit Form 5501 together with their project application package.

In general, for projects that are not Priority Development Projects, compliance with BMP requirements will include:

i. Implementation of Source Control BMPs as listed on Form 5501.

ii. Inclusion of Low Impact Development (LID) Site Design BMPs that conserve natural features, set back development from natural water bodies, minimize imperviousness, maximize infiltration, and retain and slow runoff.

iii. Compliance with requirements for construction-phase controls on sediment and other pollutants.

iv. Compliance with any additional controls appropriate to the project, which may include Treatment Control BMPs. LID Site Design BMPs such as infiltration or bioretention are preferred. If treatment facilities are included, provisions must be made to ensure their long-term maintenance.

b. Priority Development Project Requirements. Priority Development Projects must incorporate all applicable requirements included in the project's Water Quality Technical Report, as approved by the City, into the project design. This includes Low Impact Development Site Design, Source Control, Treatment Control, Hydromodification Management Controls, as well as other BMPs applicable to individual priority project categories. If a Priority Development Project meets more than one priority project category definition, the project is subject to all BMPs applicable to individual priority project categories that apply. For example, if a project proposes to build 50 attached residential units and a 6,000 square foot restaurant with a 70-space surface parking lot, the project would be subject to the individual priority project category BMP requirements for "Attached Residential Development," "Restaurants," and "Parking Lots". Refer to Section 2.2, "Prepare & Submit Appropriate Plans," for guidance in the permanent BMP design process.

Developers of Priority Development Projects shall prepare and submit to the City a Water Quality Technical Report (WQTR) in accordance with Section 4 of this Manual.

c. Application for a Change in Land Use Type. The City requires applications for a change in land use type on existing developments, such as conversion of apartment units to condominiums, or a residential unit to a restaurant, to comply with Priority Development Project requirements, even if the proposed change does not include adding or replacing impervious areas. For such projects, the City will take into consideration limiting factors for implementing BMPs on existing developments.

2.1.2 Construction Storm Water BMP Requirements

All development projects must comply with applicable standards included in Section 7, "Construction Storm Water Performance Standards," as appropriate depending upon site conditions, season, project design, and construction methods. Refer to Section 2.2, "Prepare and Submit Appropriate Plans," for guidance to ensure construction BMP performance standards are met.

2.2 Prepare and Submit Appropriate Plans

After determining the general categories of storm water requirements that apply to the project in Section 2.1, "Determine Applicable Storm Water BMP Requirements," (e.g., Standard Requirements, Priority Development Project Requirements, and/or Construction Storm Water BMP Requirements), refer to the instructions in this section to determine what analysis and/or specific BMP requirements must be provided and/or incorporated into the project. Projects are only required to provide applicable BMPs. For example, an attached residential development project subject to the Priority Development Project requirements would not have to meet the "private road" requirements in this Manual if no private roads are proposed. The City may approve alternatives to the BMP requirements in this Manual if said alternatives are applicable and equally effective at the City's discretion.

2.2.1 Permanent Storm Water BMPs

Non-Priority Development Projects are subject to Standard Requirements for permanent storm water BMPs as described in Section 2.2.1.a. Priority Development Projects shall meet SUSMP requirements described in Section 2.2.1.b. Further details regarding project submittals are discussed in Sections 3 to 8 of this Manual.

a. Standard Requirements Development Projects not falling under any of the Priority Development Project categories are subject to Standard Permanent Best Management Practices requirements described in Section 6 of this Manual. Applicants for such projects shall complete and sign Form 5501 and submit the completed form with their application package to the City. Applicable permanent BMPs identified on Form 5501 shall be incorporated into the project plans prior to submittal, regardless of project type. Also, additional analysis or information may be required by the City to enable staff to determine the adequacy of proposed BMPs, and will be requested through the project review process. Applicable permanent BMPs shall be implemented and be functional

prior to the final inspection, issuance of a certificate of occupancy, bond release, or similar events.

Standard Permanent Best Management Practices typically include a combination of Low Impact Development Site Design BMPs, Source Control BMPs, and BMPs applicable to individual project categories.

b. Priority Development Project Requirements Development projects falling under any of the Priority Development Project categories are subject to the Standard Urban Storm Water Mitigation Plans (SUSMP) requirements described in Section 3. Applicants for such projects shall prepare and submit a Water Quality Technical Report as described in Section 4 of this Manual. Applicable permanent BMPs identified in the Water Quality Technical Report shall be incorporated into the project plans prior to submittal, regardless of project type. Also, additional analysis or information may be required by the City to enable staff to determine the adequacy of proposed BMPs, and will be requested through the project review process. Applicable permanent BMPs shall be implemented and be functional prior to the final inspection, issuance of a certificate of occupancy, bond release, or similar events.

Permanent Best Management Practices for Priority Development Projects typically include a combination of Low Impact Development Site Design BMPs, Source Control BMPs, Treatment Control BMPs, and Hydromodification Control BMPs. Applicants for Priority Development Projects are required to demonstrate that implemented permanent BMPs will be maintained into perpetuity as described in Section 8. This may involve developing an Inspection, Operation, and Maintenance Plan (IOMP) and signing a maintenance agreement with the City that identifies the responsible party for the maintenance of BMPs and a funding mechanism.

2.2.2 Construction Storm Water BMPs

Section 7 “Construction Storm Water Performance Standards” describes construction site management requirements and sets out performance standards that construction sites are required to meet. Typical erosion control, sediment control, and materials management BMPs are listed, however, more extensive discussions of construction storm water BMPs are available in references included in Section 5. All construction projects must identify their construction BMPs to be implemented in accordance with performance standards in Section 7 and submit applicable forms and documents.

Construction Storm Water BMP requirements vary for different projects depending on their land disturbance area. Sections 2.2.2.a and 2.2.2.b discuss different requirements.

a. Construction Projects Disturbing One or More Acre If a project disturbs one or more acre of land, the applicant must comply with the requirements of Order No. 2009-0009-DWQ of the State General Construction Permit for Storm Water Discharges Associated with Construction Activity (State General Construction Permit), or its subsequent re-

issuances. Concurrent with filing all Permit Registration Documents with the State Water Resources Control Board, the applicant is required to prepare a Storm Water Pollution Prevention Plan (SWPPP), which identifies all applicable construction BMPs. A copy of the project's SWPPP shall be submitted to the City of Chula Vista for review and comment during the project's review process. Additionally, and consistent with the State General Construction Permit, all construction projects are required to comply with erosion and sediment control requirements of Section 7, and implement good housekeeping BMPs, site management, and materials management practices.

b. Construction Projects Disturbing Under 1 Acre For construction projects that disturb less than one acre of land, the applicant must submit with the project submittal, a completed and signed Construction Storm Water Management Plan (CSWMP), which identifies all construction BMPs required by Section 7. The CSWMP shall depict the BMPs to be implemented during construction to minimize/eliminate discharges of pollutants to the storm drainage system. The CSWMP shall include, but not be limited to, erosion and sediment control BMPs, good housekeeping BMPs, site management, and materials management (See Forms 5504A and 5504B in Section 2.6 of this Manual).

Plans and supporting documents prepared in accordance with this Manual shall be submitted to the City for review (See Section 2.3).

2.3 Determine Adequacy of Proposed Plans

The City will review submitted plans and documents for compliance with applicable storm water requirements contained in this Manual. The City may approve proposed alternatives to BMP requirements in this Manual if said alternatives are determined by the City to be applicable and equally effective. The City may require additional analysis or information to enable staff to determine the adequacy of proposed BMPs. After all storm water requirements have been approved by the City, the applicant is directed to proceed to Section 2.4 to assure implementation and maintenance of the approved BMPs through permit conditions, plan notes, or maintenance agreements.

2.4 Assure Implementation and Maintenance of BMPs

Applicants must provide assurances that permanent storm water BMPs will be constructed and maintained throughout the life of a development project, and that construction BMPs will be implemented and maintained until construction is complete and the project site is stabilized. Construction and permanent BMP requirements, as described below, must be assured during the development project's review processes. Refer to Section 8, "Implementation and Maintenance Requirements," to determine how construction and permanent BMP implementation and maintenance will be assured.

2.4.1 Private Development Projects

Permanent structural storm water BMPs, as developed pursuant to the requirements of this Manual and as approved by the City, shall be incorporated into the project design, be shown on the plans prior to the issuance of any permits, and be constructed prior to the final inspection, issuance of a certificate of occupancy, bond release, or similar events. Such structural BMPs shall be inspected and maintained throughout the life of the project in accordance with Section 8 of this Manual. Priority Development Projects shall prepare and submit an Inspection, Operation, and Maintenance Plan (IOMP) for all permanent structural treatment BMPs in accordance with Section 8 of this Manual.

Permanent non-structural BMPs, as identified in project submittals, shall be implemented into perpetuity.

Construction BMPs shall be implemented and maintained as identified in the project's SWPPP or Form 5504A, or as directed by a City inspector.

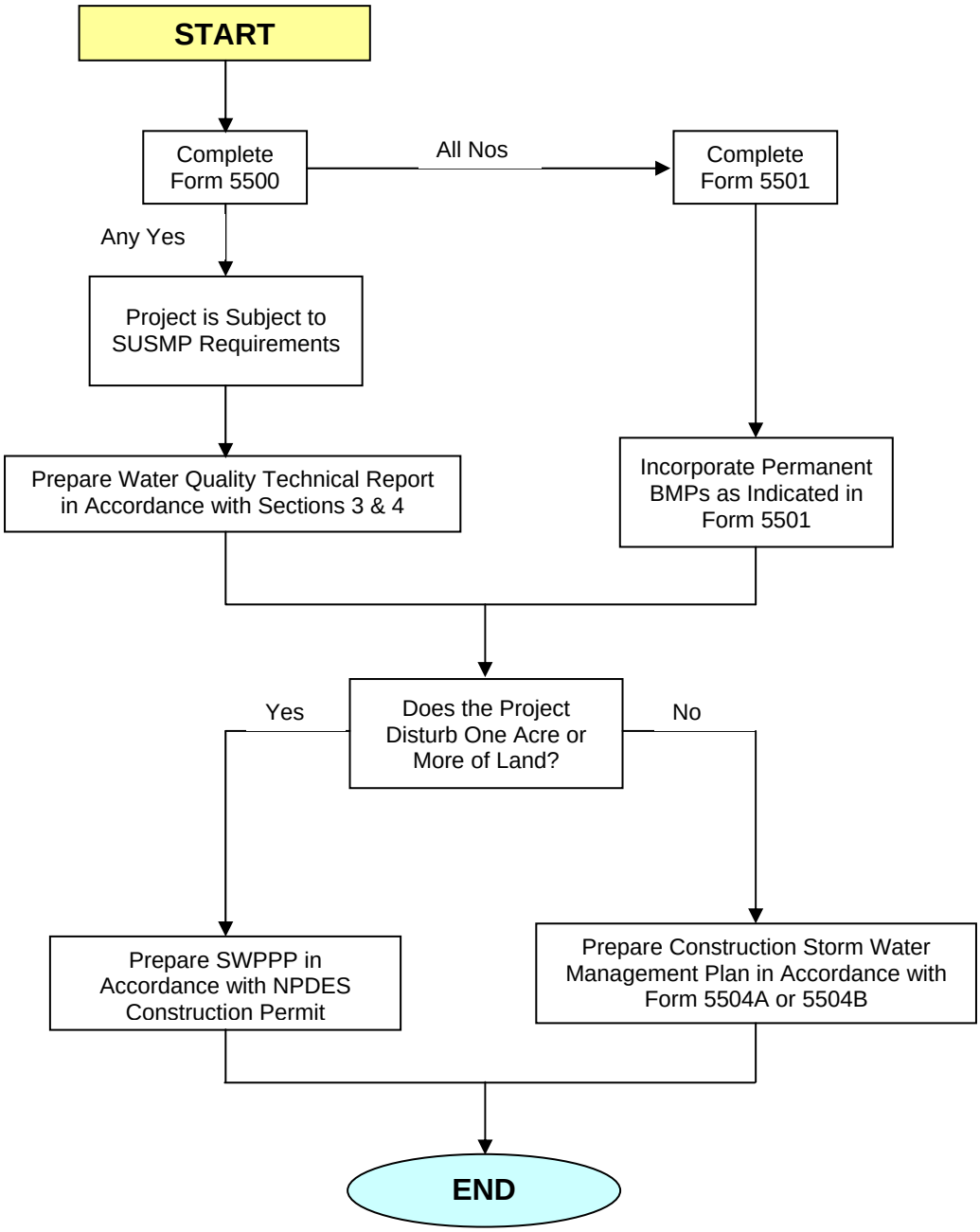
Non-compliance with any of the above requirements will constitute a violation of Chula Vista Municipal Code Chapters 14.20 and 15.04, and may subject the responsible person to enforcement action.

2.4.2 Public Development Projects

For public projects, permanent BMP requirements will be incorporated into the project design and shown on the plans. A signature on all final plans by the person In Responsible Charge will signify compliance with permanent BMP requirements. The City will maintain all permanent BMPs on public projects.

Construction BMPs will be described in the project's SWPPP or Form 5504B, as applicable. Public project contract documents will include provisions that require the contractor to implement and maintain construction BMPs in accordance with this Manual.

2.5 Project Submittal Process Flow Chart



The State Water Resources Control Board requires certain types of industrial facilities to obtain coverage under the NPDES General Permit for Discharges of Storm Water Associated with Industrial Activities (Order No. 97-03-DWQ). If your proposed project includes industrial activities, please contact the San Diego Regional Water Quality Control Board at (858) 467-2952 for more information.

2.6 Applicability Checklists and Forms

Please refer to the following pages for Applicability Checklists and Forms.

Forms in this section include:

Form 5500 – Permanent Storm Water BMPs Applicability Checklist

Form 5501 – Standard Permanent BMPs Requirements

Form 5502 – Storm Water Treatment BMPs Inspection and Maintenance Certification

Form 5504A – Construction Storm Water Management Plan (CSWMP) Guidelines for Private Development

Form 5504B – Construction Storm Water Management Plan (CSWMP) Guidelines for Public Projects

CITY OF CHULA VISTA	**DEVELOPMENT SERVICES DEPARTMENT** 276 Fourth Avenue, Chula Vista, CA 91910 Phone: (619) 691-5021 Fax: (619) 691-5171	**PERMANENT STORM WATER BMPs APPLICABILITY CHECKLIST**
	FORM 5500	

Complete the following checklist to determine the project's permanent Best Management Practices requirements. This form must be completed and submitted with the permit application.

If one or more questions in the checklist are answered "Yes", the project is a Priority Development Project subject to the Standard Urban Storm Water Mitigation Plan (SUSMP) requirements in Section 3 of this Manual. If all answers are "No", please complete Form 5501 to select applicable Standard Permanent BMPs for your proposed project.

Project category descriptions in the following checklist are abbreviated for clarity. Please refer to the definitions in the NPDES Municipal Permit, Order No. R9-2007-0001, or Sections 3.1 and 9 of this Manual for expanded definitions of "Priority Development Projects" and "Redevelopment."

Does the project meet the definition of one or more of the Priority Development Project Categories below?

	Priority Development Project Categories	Yes	No
1	Housing subdivisions of 10 or more dwelling units.		
2	Commercial developments greater than one acre		
3	Developments of heavy industry greater than one acre		
4	Automotive repair shops		
5	Restaurants		
6	All Hillside development greater than 5,000 square feet		
7	Development within or adjacent to Environmentally Sensitive Areas		
8	Parking lots 5,000 square feet or more or with 15 or more parking spaces and potentially exposed to urban runoff		
9	Streets, roads, highways, and freeways		
10	Retail Gasoline Outlets		
11	Development Projects that result in the disturbance of one acre or more of land		
12	Redevelopment projects that create, add, or replace at least 5,000 square feet of impervious surfaces on an already developed site that falls under the project categories or locations listed above		

Limited Exclusion: Trenching and resurfacing work associated with utility projects are not considered Priority Development Projects unless the project results in new impervious surfaces. Parking lots, buildings, and other structures associated with utility projects are Priority Development Projects if one or more of the criteria is met.

CITY OF CHULA VISTA	**DEVELOPMENT SERVICES DEPARTMENT** 276 Fourth Avenue, Chula Vista, CA 91910 Phone: (619) 476-5377 Fax: (619) 691-5171	**STANDARD PERMANENT BMPs REQUIREMENTS**
	FORM 5501	

Section 1 - Checklist

This form is to be completed if, in completing Form 5500, it is determined that the project is **not** a "Priority Development Project". Complete the following checklist to determine the applicability of Standard Permanent BMPs to the project. Sign the Certification Statement in Section 3 of this form and submit it with your permit application package.

If one or more questions in the following checklist are answered "Yes", the project is subject to the applicable "Standard Permanent BMPs" requirements identified in Section 2 of this form. If all answers are "No", the project is exempt from Standard Permanent Storm Water BMPs.

Does the proposed project include or fall under any of the following categories:

	Project Feature or Category	Yes	No	Applicable BMPs (refer to Section 2 of this form)
1	Impervious areas, such as rooftops, roads, parking lots, driveways, paths, and sidewalk			A.1, A.2, B.1, C.1, C.2, C.8, C.11
2	Pervious landscape areas and irrigation system			B.4, C.10
3	Permanent structures within 100 feet of any natural water body			A.1, A.2, A.3
4	Trash storage areas			B.3
5	Liquid or solid material loading and unloading areas			A.2, B.2, C.3
6	Vehicle or equipment fueling, washing, or maintenance areas			C.4, C.5, C.6, C.7, C.9
7	Commercial or industrial waste handling or storage, excluding typical office or household waste			A.2, B.2, B.3, C.3, C.6
8	Drainage systems			A.3, B.1, C.11

Applicable BMPs listed above for each project feature or category are minimum standard permanent BMPs that are required to be implemented on non-priority development projects as applicable.

Section 2 – Standard Permanent BMPs

Development projects subject to Standard Permanent BMP requirements shall incorporate all necessary permanent BMPs into the project plans prior to submittal, regardless of project type. The City may approve proposed alternatives to the BMP requirements in this Manual if said alternatives are determined by the City to be applicable and equally effective. Also, additional BMPs, analysis or information may be required by the City to enable staff to determine the adequacy of proposed BMPs, and will be requested through the project review process. Refer to Sections 2.1.1 "Permanent Storm Water BMP Requirements" and 2.2 "Prepare and Submit Appropriate Plans" of this Manual for guidance in the BMP design process.

Projects shall incorporate, where applicable, storm water BMPs into the project design, in the following progression:

- Low Impact Development (LID) Site Design BMPs
- Source Control BMPs
- BMPs for Individual Project Categories

The series of BMPs listed below have been organized sequentially to allow the applicant and design professional to incorporate the LID Site Design BMPs, Source Control BMPs, and where necessary, requirements applicable to individual project categories in this progression. Detailed descriptions and requirements of BMPs are provided in Section 6 of this Manual.

A. LID Site Design BMPs

A.1. Minimize Project's Impervious Footprint & Conserve Natural Areas

a. Minimize impervious footprint.
b. Conserve natural areas where feasible, consistent with the City's environmental regulations.
c. Where feasible and practical, as determined by the City Engineer, construct walkways, trails, patios, overflow parking lots and alleys and other low-traffic areas with permeable surfaces.
d. Construct streets, sidewalks and parking lot aisles to the minimum acceptable widths.
e. Maximize canopy interception and water conservation.
f. Use natural drainage systems to the maximum extent practicable.

A.2. Minimize Directly Connected Impervious Areas (DCIAs)

a. Where landscaping is proposed, drain rooftops into adjacent landscaping prior to discharging to the storm drain.
b. Where landscaping is proposed, drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping.

A.3. Protect Slopes and Channels

a. Convey runoff safely from the tops of slopes.
b. Vegetate slopes with deep-rooted native or drought tolerant vegetation.
c. Control and treat flows in landscaping and/or other controls prior to reaching existing natural drainage systems.
d. Stabilize permanent channel crossings.
e. Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels.

B. Source Control BMPs.

B.1. Provide Storm Drain System Stenciling and Signage

a. Provide stenciling, labeling, or stamping in fresh concrete with "NO DUMPING" signs.
b. Post signs and prohibitive language and/or graphical icons, which prohibit illegal dumping.
c. Maintain legibility of stencils and signs.

B.2. Design Outdoor Material Storage Areas to Reduce Pollution Introduction

a. Place hazardous materials in an enclosure or protect them by secondary containment structures.
b. Pave storage areas with impervious pavements, graded to prevent run-on and run-off.
c. Provide roof or awning over storage areas.

B.3. Design Trash Storage Areas to Reduce Pollution Introduction

a. Pave with an impervious surface, designed not to allow run-on from adjoining areas and screened or walled to prevent off-site transport of trash.
b. Provide roof or awning to minimize direct precipitation and prevent run-off.

B.4. Use Efficient Irrigation Systems & Landscape Design, and Employ Integrated Pest Management Principles

a. Design the timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm drainage system (Best Irrigation Practices). Consider and implement the following methods:

   - o Employ rain shutoff devices to prevent irrigation during or after precipitation.
   - o Design irrigation systems to each landscape area's specific water requirements.
   - o Use flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
   - o Provide water conservation educational materials to future residents/tenants.

b. Employ Integrated Pest Management Principles

   Eliminate and/or reduce the need for pesticide use in the project design by:

   - o Planting pest-resistant or well-adapted plant varieties such as native plants.
   - o Discouraging pests by modifying the site and landscaping design.

   Distribute IPM educational materials to future site residents/tenants. Minimally, educational materials must address the following topics:

   - o Keeping pests out of buildings and landscaping using barriers, screens, and caulking.
   - o Physical pest elimination techniques, such as weeding, squashing, trapping, washing, or pruning out pests.
   - o Relying on natural enemies to eat pests.
   - o Proper use of pesticides as a last line of defense.

C. BMPs Applicable to Individual Project Categories

C.1. Private Roads

a. Rural swale system: Direct street sheet flows to vegetated swale or gravel shoulder, curbs at street corners, culverts under driveways and street crossings.
b. Urban curb/swale system (street slopes to curb): Install periodic swale inlets that drain to vegetated swales/biofilters.
c. Dual drainage system: First flush captured in street catch basins and discharged to adjacent vegetated swale or gravel shoulder; high flows connect directly to storm drainage system.

C.2. Residential Driveways & Guest Parking

a. Design driveways with shared access among multiple properties, flares (single lane at street), or wheel strips (paving only under tires); or drain into landscaping prior to discharging to the storm drainage system.
b. Uncovered temporary or guest parking on private residential lots may be paved with a permeable surface; or, designed to drain into landscaping prior to discharging to the storm drainage system.

C.3. Dock Areas

a. Cover loading dock areas, or design drainage to preclude run-on and runoff.
b. Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.

C.4. Maintenance Bays

a. Repair/maintenance bays shall be indoors or designed to preclude run-on and run-off.
b. Design a repair/maintenance bay drainage system to capture all wash water, leaks, and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by the City, obtain an Industrial Waste Discharge Permit.

C.5. Vehicle Wash Areas

a. Self-contained; or covered with a roof or overhang.
b. Equipped with a clarifier or other pretreatment facility.
c. Properly connected to a sanitary sewer, as approved by the City.

C.6. Outdoor Processing Areas

a. Cover or enclose areas that would be the most significant source of pollutants; slope the area towards a dead-end sump; or, discharge to the sanitary sewer after first obtaining a permit from the City of Chula Vista.
b. Grade or berm area to prevent run-on from surrounding areas.
c. Installation of storm drains in areas of equipment repair is prohibited.

C.7. Equipment Wash Areas

Outdoor equipment/accessory washing and steam cleaning activities at projects shall meet the following requirements:

a. Be self-contained or covered with a roof or overhang.
b. Be equipped with a clarifier, grease trap, or other pretreatment facility, as appropriate.
c. Be properly connected to a sanitary sewer after first obtaining a permit from the City of Chula Vista.

C.8. Parking Areas

a. Where landscaping is proposed in parking areas, incorporate landscape areas into the drainage design.
b. Where feasible and practical, outdoor parking areas shall be constructed with permeable paving. Permeable paving is strongly recommended for overflow parking (parking stalls provided in excess of the City of Chula Vista's minimum parking requirements).

C.9. Fueling Area

a. Provide overhanging roof structure or canopy.
b. Pave with Portland cement concrete (or equivalent smooth impervious surface). The use of asphalt concrete shall be prohibited.
c. Provide an appropriate slope to prevent ponding. Fueling areas shall be separated from the rest of the site by a grade break that prevents run-on.
d. At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.

C.10. Hillside Landscaping

a. Hillside areas disturbed by project development shall be landscaped with deep-rooted, drought tolerant plant species selected for erosion control, satisfactory to the City.

C.11. Design of Drainage Systems for Industrial/Commercial facilities

a. Avoid sheet flow of runoff to the street gutter.
b. Provide filtration, infiltration, or other Best Management Practices satisfactory to the City before discharging runoff to public storm drainage systems.
c. The property owner or an approved private entity shall maintain all private storm drainage systems.

Section 3 - Certification – The property owner must sign this section certifying that he/she understands the City's Standard Permanent BMPs requirements for development projects and will implement and maintain the selected BMPs and ensure that mechanisms are in place to properly and effectively maintain the selected BMPs. The following certification must be signed and submitted with the permit application package.

I understand that the City of Chula Vista has adopted Standard Permanent BMPs requirements for storm water management on development projects. I certify that the BMPs applicable to the project as marked in the Checklist in Section 1 of this form will be implemented to effectively minimize the potentially negative impacts of this project on storm water quality. I further certify that mechanisms are in place to properly and effectively maintain the implemented BMPs. I also understand that non-compliance with the City's Storm Water Management and Discharge Control, and Grading Ordinances may result in enforcement action by the City as provided in the Chula Vista Municipal Code.

Property Owner Name: _____ Signature: _____ Date:_____

CITY OF CHULA VISTA	**PUBLIC WORKS DEPARTMENT, OPERATIONS** 1800 Maxwell Road, Chula Vista, CA 91911 Phone: (619) 397-6111 Fax: (619) 397-6259	**STORM WATER TREATMENT BMPS INSPECTION AND MAINTENANCE CERTIFICATION FORM**
FORM 5502		

Section 1

The following is a list of storm water Treatment Control Best Management Practices (BMPs) that may exist within your development. Please indicate the number of each type of BMP existing in your development and list the dates of inspections and maintenance activities during the past 12 months.

Type of BMP	Filter Insert	Hydrodynamic Separator	Wet Vault	Vegetated Swale	Bio Retention	Other _____
Number of Units						
☐Inspection						
☐Maintenance						
☐Inspection						
☐Maintenance						
☐Inspection						
☐Maintenance						
☐Inspection						
☐Maintenance						
☐Inspection						
☐Maintenance						

Section 2

The following certification must be signed and returned to the City of Chula Vista as explained in the cover letter.

I understand that the development entitlement agreement for the development that I represent includes inspection and maintenance requirements for storm water treatment facilities. Further, I understand that Chula Vista Municipal Code Chapter 14.20, and the Chula Vista Development Storm Water Manual include requirements for the minimization of polluted discharges through the use of Best Management Practices. I certify that the information provided in Section 1 above is, to the best of my knowledge, true and accurate.

I also understand that non-compliance with the City's storm water management regulations may result in enforcement action by the City.

Name and Title: _____

Development Name: _____

Address: _____

Signature: _____ Date: _____

CITY OF CHULA VISTA	**DEVELOPMENT SERVICES DEPARTMENT** 276 Fourth Avenue, Chula Vista, CA 91910 Phone: (619) 476-5377 Fax: (619) 691-5171	**CONSTRUCTION STORM WATER MANAGEMENT PLAN (CSWMP) GUIDELINES FOR PRIVATE DEVELOPMENT**
	FORM 5504A	

For a development or redevelopment project that results in land disturbance of **less than one acre**, the property owner is required to complete and submit this form 5504A (Construction Storm Water Management Plan (CSWMP)) prior to issuance of any permit.

Projects that disturb one acre or more of land or are part of a larger common plan of development or the sale of one or more acres of disturbed land surface are subject to the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities. Such projects are required to apply to the San Diego Regional Water Quality Control Board for coverage under said Permit and, prepare a Storm Water Pollution Prevention Plan (SWPPP)

The purpose of the CSWMP is to document Best Management Practices (BMPs) that will be implemented to prevent pollutants, including sediment, from entering storm drainage systems and receiving waters. The CSWMP becomes a part of the permit and is subject to enforcement by the City and others.
CSWMP includes the elements described in the following sections:

Section 1: **Required Information** - This section provides basic information about the project. Each of the items in this section must be completed.

PROJECT INFORMATION

Permit Application Number:	**Project start date:**
Project Name:	**Project finish date:**
Project address or location:	
APN:	
Estimated amount of disturbed acreage:	

CONTACT INFORMATION

Name of Project Contact Person:
Title:
Address:
Phone #:

Section 2: Best Management Practices (BMPs) –Adequate BMPs must be selected and implemented to prevent erosion and to minimize construction-related materials, sediment, wastes and spills from entering storm drainage systems and receiving waters. It is the responsibility of the property owner and the contractor to determine the types of BMPs that will be used, as well as the levels of application necessary to comply with the City's Storm Water Management and Discharge Control, and Grading Ordinances. Failure to prevent soil erosion and discharges of sediment and other pollutants from construction sites is subject to enforcement by the City and others. At a minimum, all BMPs applicable to the project shall be selected from Table A and be installed and maintained. A City inspector may require additional BMPs if selected BMPs are found to be inadequate.

The goal of storm water management planning is to reduce pollution to the Maximum Extent Practicable (MEP) by implementing the following categories of BMPs:

1. Erosion control
2. Sediment control
3. Wind erosion control
4. Tracking control
5. Non-storm water management
6. Waste management & materials pollution control
7. General site management

BMPs from each of the categories must be used together as a system in order to prevent sediment, wastes, spills, and residues from leaving the site. When properly implemented, monitored, and maintained, BMPs will function to prevent pollutants (including sediment) from leaving the site.

Best Management Practices Table A

Table A must be completed to identify those BMPs that will be used to prevent storm water pollution. At a minimum, the City requires that one or more BMPs from each category listed in Table A be selected and implemented as applicable. However, some BMPs may not be applicable to every project. For example, if storm drain inlets were not present, then Storm Drain Inlet Protection (BMP SE-10) would not be applicable. Alternative storm water protection measures may be presented for City consideration in any category. Detailed descriptions for referenced BMPs are included in the California Stormwater Quality Association (CASQA) Stormwater BMP Handbook for Construction. Equivalent BMPs can be found in the Caltrans Construction Site BMP Manual, but with different Fact Sheet designations.

Copies of the referenced guidance manuals can be accessed on the web as follows:

1. California Stormwater Quality Association Stormwater BMP Handbook for Construction:
   http://www.cabmphandbooks.com
2. Caltrans Construction Site BMP Manual:
   http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm
3. City of Chula Vista Development Storm Water Manual:
   http://www.chulavistaca.gov/clean/stormwater/developandconst.asp

Grading Plan/Improvement Plan Best Management Practice Checklist

The following information shall be shown on the plans:

1. Project boundaries and limits of grading
2. Footprint of all existing and proposed structures and facilities
3. Existing and proposed site grades, along with any intermediate grades that will significantly affect the site drainage patterns
4. Existing and proposed drainage patterns and location(s) where runoff from the site may enter storm drain(s), channel(s), and/or receiving waters
5. Locations of all structural construction BMPs

TABLE A - REQUIRED CONSTRUCTION BMPs

Select applicable BMPs from this table by placing a check mark in the appropriate box under the heading "Check Selected BMPs". Submit completed Form 5504A together with your development application package to the City.

Required BMPs	CASQA Handbook BMP Fact Sheet	Check Selected BMPs	If BMPs are not selected, explain why.
Erosion Control BMPs			
Scheduling	EC-1		
Preservation of Existing Vegetation	EC-2		
Hydraulic Mulch (see Note 2)	EC-3		
Hydroseeding (see Note 1)	EC-4		
Soil Binders (see Note 2)	EC-5		
Straw Mulch (see Note 2)	EC-6		
Geotextiles and Mats (see Note 2)	EC-7		
Wood Mulching (see Note 2)	EC-8		
Sediment Control BMPs			
Silt Fence	SE-1		
Sediment Basin (see Note 3)	SE-2		
Sediment Traps (see Note 4)	SC-3		
Check Dams	SC-4		
Fiber Rolls	SE-5		
Gravel Bag Berm	SE-6		
Street Sweeping/Vacuuming	SE-7		
Sandbag Barrier	SE-8		
Straw Bale Barrier	SE-9		
Storm Drain Inlet Protection	SE-10		
Wind Erosion Control BMP			
Wind Erosion Controls (Dust Control BMPs)	WE-1		
Tracking Control BMPs			
Stabilized Construction Entrance/Exit	TC-1		
Stabilized Construction Roadway	TC-2		
Non-Stormwater Management BMPs			
Water Conservation Practices	NS-1		
Dewatering Operations	NS-2		
Paving & Grinding Operations	NS-3		
Illicit Connection/Discharge	NS-6		
Potable Water/Irrigation	NS-7		
Vehicle and Equipment Cleaning	NS-8		
Vehicle and Equipment Fueling	NS-9		
Vehicle and Equipment Maintenance	NS-10		
Concrete Curing	NS-12		
Concrete Finishing	NS-13		

TABLE A - REQUIRED CONSTRUCTION BMPs (continued)			
Required BMPs	**CASQA Handbook BMP Fact Sheet**	**Check Selected BMPs**	**If BMPs are not selected, explain why.**
Waste Management & Materials Pollution Controls BMPs			
Material Delivery and Storage	WM-1		
Material Use	WM-2		
Stockpile Management	WM-3		
Spill Prevention and Control	WM-4		
Solid Waste Management	WM-5		
Hazardous Waste Management	WM-6		
Contaminated Soil Management	WM-7		
Concrete Waste Management	WM-8		
Sanitary/Septic Waste Management	WM-9		
Liquid Waste Management	WM-10		
General Site Management			
Employee and Subcontractor Training	-		

Notes:

1. When planting or hydroseeding methods are selected for erosion control, the vegetative cover must be planted by August 15th and established by October 1st. If in the opinion of the City inspector the vegetative cover is not established by October 1st, additional hydraulic or physical erosion control BMPs will be required.
2. These BMPs are temporary measures only when used without planting or hydroseeding and permanent irrigation systems. All slopes must have established vegetative cover prior to final grading approval.
3. Sediment basins are typically suitable for drainage areas between 5 to 75 acres. If selected, sediment basins shall be designed in accordance with methods provided in the CASQA Handbooks.
4. Sediment traps are suitable for drainage areas less than 5 acres.
5. Alternative storm water protection measures, such as those listed in the Caltrans Construction Site Best Management Practices (BMPs) Manual may also be presented for City consideration in any category.
6. All selected BMPs must be shown on the Grading Plans.

Section 3: Certification – The property owner and contractor must sign this section certifying that they understand the City's minimum requirements for storm water management of construction activities and will implement, monitor, and maintain the selected BMPs to ensure their continued effectiveness.

The following certification must be signed before a Permit is issued.

I have read and understand City of Chula Vista's requirements for storm water management on construction sites. I certify that the BMPs I have selected in Table A will be implemented to effectively minimize negative impacts of this project's construction activities on storm water quality. I further agree to install, monitor, and maintain additional BMPs as directed by a City Inspector if selected BMPs are found to be inadequate. I also understand that non-compliance with the City's Storm Water and Grading Ordinances may result in enforcement action by the City.

Contracting Company Name: _____Contractor's Representative Name: _____

Contractor's Signature: _____Date: _____

Property Owner's Name: _____

Property Owner's Signature: _____Date: _____

CITY OF CHULA VISTA	**DEVELOPMENT SERVICES DEPARTMENT** 276 Fourth Avenue, Chula Vista, CA 91910 Phone: (619) 476-5377 Fax: (619) 691-5171	**CONSTRUCTION STORM WATER MANAGEMENT PLAN (CSWMP) GUIDELINES FOR PUBLIC PROJECTS**
	FORM 5504B	

This form is to accompany all public development and redevelopment contract documents for projects that result in land disturbance of less than one acre

The City of Chula Vista requires contractors for public projects that result in land disturbance of less than one acre to complete this Form 5504B (Construction Storm Water Management Plan (CSWMP)). Completed forms shall be submitted to the City before a "Notice to Proceed" is issued.

The purpose of a CSWMP is to document Best Management Practices (BMPs) that will be implemented to prevent pollutants, including sediment, from entering storm drainage systems and receiving waters. The CSWMP becomes a part of the contract and is subject to enforcement by the City and others. CSWMP includes the elements described in the following sections:

Section 1: **Required Information** - This section provides basic information about the project. Each of the items in this section must be completed.

PROJECT INFORMATION

Project number:	**Project start date:**
Project Name:	**Project finish date:**
Project address or location:	
APN:	
Estimated amount of disturbed acreage:	

CONTRACTOR'S CONTACT INFORMATION

Name of contractor's project contact person:
Title:
Address:
Phone #:

Section 2: Best Management Practices (BMPs) – Adequate BMPs must be selected and implemented to prevent erosion, and to minimize construction-related materials, sediment, wastes and spills from entering storm drainage systems and receiving waters. It is the responsibility of the contractor to determine the types of BMPs that will be used, as well as the levels of application necessary to comply with the City's Storm Water Management and Discharge Control, and Grading Ordinances. Failure to prevent soil erosion and discharges of sediment and other pollutants into the storm drainage system from construction sites is subject to enforcement by the City and others. At a minimum, all BMPs applicable to the project shall be selected from Table A and be installed and maintained. A City Inspector may require additional BMPs if selected BMPs are found to be inadequate.

The goal of storm water management planning is to reduce pollution to the Maximum Extent Practicable (MEP) by implementing the following categories of BMPs:

1. Erosion control
2. Sediment control
3. Wind erosion control
4. Tracking control
5. Non-storm water management

b. Waste Management & materials pollution control
c. General site management

BMPs from each of the categories must be used together as a system in order to prevent sediment, wastes, spills, and residues from leaving the site. When properly implemented, monitored, and maintained, BMPs will function to prevent pollutants (including sediment) from leaving the site.

Best Management Practices Table A

Table A must be completed to identify those BMPs that will be used to prevent storm water pollution. At a minimum, the City requires that one or more BMPs from each category listed in Table A be selected and implemented as applicable. However, some BMPs may not be applicable to every project. For example, if storm drain inlets were not present, then Storm Drain Inlet Protection (BMP SE-10) would not be applicable. Alternative storm water protection measures may be presented for City consideration in any category. Detailed descriptions for referenced BMPs are included in the California Stormwater Quality Association (CASQA) Stormwater BMP Handbook for Construction. Equivalent BMPs can be found in the Caltrans Construction Site BMP Manual, but with different Fact Sheet designations.

Copies of the referenced guidance manuals can be accessed on the web as follows:

1. California Stormwater Quality Association Stormwater BMP Handbook for Construction:
   http://www.cabmphandbooks.com
2. Caltrans Construction Site BMP Manual:
   http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm
3. City of Chula Vista Development Storm Water Manual is available online at:
   http://www.chulavistaca.gov/clean/stormwater/developandconst.asp

TABLE A – REQUIRED MINIMUM CONSTRUCTION BMPs

Select applicable BMPs from this table by placing a check mark in the appropriate box under the heading "Check Selected BMPs". Submit completed Form 5504B to the City before a "Notice To Proceed" is issued.

Required BMPs	CASQA Handbook BMP Fact Sheet	Check Selected BMPs	If BMPs are not selected, explain why.
Erosion Control BMPs			
Scheduling	EC-1		
Preservation of Existing Vegetation	EC-2		
Hydraulic Mulch (see Note 2)	EC-3		
Hydroseeding (see Note 1)	EC-4		
Soil Binders (see Note 2)	EC-5		
Straw Mulch (see Note 2)	EC-6		
Geotextiles and Mats (see Note 2)	EC-7		
Wood Mulching (see Note 2)	EC-8		
Sediment Control BMPs			
Silt Fence	SE-1		
Sediment Basin (see Note 3)	SE-2		
Sediment Traps (see Note 4)	SC-3		
Check Dams	SC-4		
Fiber Rolls	SE-5		
Gravel Bag Berm	SE-6		
Street Sweeping/Vacuuming	SE-7		
Sandbag Barrier	SE-8		
Straw Bale Barrier	SE-9		
Storm Drain Inlet Protection	SE-10		
Wind Erosion Control BMP			
Wind Erosion Controls (Dust Control BMPs)	WE-1		
Tracking Control BMPs			
Stabilized Construction Entrance/Exit	TR-1		
Stabilized Construction Roadway	TR-2		
Non-Stormwater Management BMPs			
Water Conservation Practices	NS-1		
Dewatering Operations	NS-2		
Paving & Grinding Operations	NS-3		
Illicit Connection/Discharge	NS-6		
Potable Water/Irrigation	NS-7		
Vehicle & Equipment Cleaning	NS-8		
Vehicle & Equipment Fueling	NS-9		
Vehicle & Equipment Maintenance	NS-10		
Concrete Curing	NS-12		
Concrete Finishing	NS-13		

TABLE A - REQUIRED CONSTRUCTION BMPs (continued)

Required BMPs	CASQA Handbook BMP Fact Sheet	Check Selected BMPs	If BMPs are not selected, explain why.
Waste Management & Materials Pollution Controls BMPs			
Material Delivery & Storage	WM-1		
Material Use	WM-2		
Stockpile Management	WM-3		
Spill Prevention & Control	WM-4		
Solid Waste Management	WM-5		
Hazardous Waste Management	WM-6		
Contaminated Soil Management	WM-7		
Concrete Waste Management	WM-8		
Sanitary/Septic Waste Management	WM-9		
Liquid Waste Management	WM-10		
General Site Management			
Employee and Subcontractor Training	-		

Notes:

1. When planting or hydroseeding methods are selected for erosion control, the vegetative cover must be planted by August 15th and established by October 1st. If in the opinion of the City inspector the vegetative cover is not established by October 1st, additional hydraulic or physical erosion control BMPs will be required.
2. These BMPs are temporary measures only when used without planting or hydroseeding and permanent irrigation systems. All slopes must have established vegetative cover prior to final grading approval.
3. Sediment basins are typically suitable for drainage areas between 5 to 75 acres. If selected, sediment basins shall be designed in accordance with methods provided in the CASQA Handbooks.
4. Sediment traps are suitable for drainage areas less than 5 acres.
5. Alternative storm water protection measures, such as those listed in the Caltrans Construction Site Best Management Practices (BMPs) Manual may also be presented for City consideration in any category.
6. All selected BMPs must be shown on the Grading Plans.

Section 3: Certification

The contractor must sign this section certifying that they understand the City's requirements for storm water management of construction activities and will implement, monitor and maintain the selected BMPs to ensure their effectiveness.

The following certification must be signed before a "Notice to Proceed with Construction" is issued.

I have read and understand City of Chula Vista's requirements for storm water management on construction sites. I certify that the BMPs I have selected in Table A will be implemented to effectively minimize negative impacts of this project's construction activities on storm water quality. I further agree to install, monitor, and maintain additional BMPs as directed by a City Inspector if selected BMPs are found to be inadequate. I also understand that non-compliance with the City's Storm Water Management and Discharge Control, and Grading Ordinances may result in enforcement action by the City.

Company Name: _____ Contractor's Name: _____

Contractor's Signature: _____ Date: _____

SECTION 3. STANDARD URBAN STORM WATER MITIGATION PLAN (SUSMP) **PAGE**

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SECTION 3. STANDARD URBAN STORM WATER MITIGATION PLAN (SUSMP)

3.1 Background

The National Pollutant Discharge Elimination System (NPDES) Municipal Permit (Order No. R9-2007-0001, NPDES No. CAS0108758), hereinafter referred to as "Municipal Permit" issued to San Diego County, the Port of San Diego, San Diego County Regional Airport Authority and 18 cities (Copermittees) by the San Diego Regional Water Quality Control Board (Regional Board) on January 24, 2007, requires the development and implementation of a program addressing urban runoff pollution issues in development planning for public and private projects.

The requirement to implement a program for development planning is based on federal and state statutes including: Section 402 (p) of the Clean Water Act; Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 ("CZARA"); and, the California Water Code. The Clean Water Act amendments of 1987 established a framework for regulating urban runoff discharges from municipal, industrial, and construction activities under the NPDES program. The Municipal Permit requires the implementation of a Jurisdictional Urban Runoff Management Program (JURMP). The primary objectives of the JURMP requirements are to:

a. Ensure that discharges from municipal storm drainage systems do not cause or contribute to a violation of water quality standards;
b. Effectively prohibit non-storm water discharges in urban runoff; and,
c. Reduce the discharge of pollutants from storm drainage systems to the Maximum Extent Practicable (MEP statutory standard).

The Standard Urban Storm Water Mitigation Plan (SUSMP) requirements of this section apply to all private and public development and redevelopment projects in the City of Chula Vista that meet the definition of Priority Development Projects described in Section D.1.d.(1) of the Municipal Permit, as quoted below:

"D.1.d.(1) Definition of Priority Development Project

(a) Priority Development Projects are: a) all new Development Projects that fall under the project categories or locations listed in section D.1.d.(2), and b) those redevelopment projects that create, add or replace at least 5,000 square feet of impervious surfaces on an already developed site that falls under the project categories or locations listed in section D.1.d.(2). Where redevelopment results in an increase of less than fifty percent of the impervious surfaces of a previously existing development, and the existing development was not subject to SUSMP requirements, the numeric sizing criteria discussed in section D.1.d.(6)(c) applies only to the addition, and not

the entire development. Where redevelopment results in an increase of more than fifty percent of the impervious surfaces of a previously existing development, the numeric sizing criteria applies to the entire development. Where a new Development Project feature, such as a parking lot, falls into a Priority Development Project Category, the entire project footprint is subject to SUSMP requirements.

(b) In addition to the Priority Development Project Categories identified in Section D.1.d.(2), within three years of adoption of this Order Priority Development Projects shall also include all other pollutant generating Development Projects that result in the disturbance of one acre or more of land.[4] As an alternative to this one acre threshold, the Copermittees may collectively identify a different threshold, provided the Copermittees' threshold is at least as inclusive of Development Projects as the one acre threshold.

[4]Pollutant generating Development Projects are those projects that generate pollutants at levels greater than background levels.

D.1.d.(2) Priority Development Project Categories

(a) Housing subdivisions of 10 or more dwelling units. This category includes single-family homes, multi-family homes, condominiums, and apartments.

(b) Commercial developments greater than one acre. This category is defined as any development on private land that is not for heavy industrial or residential uses where the land area for development is greater than one acre. The category includes, but is not limited to: hospitals; laboratories and other medical facilities; educational institutions; recreational facilities; municipal facilities; commercial nurseries; multi-apartment buildings; car wash facilities; mini-malls and other business complexes; shopping malls; hotels; office buildings; public warehouses; automotive dealerships; airfields; and other light industrial facilities.

(c) Developments of heavy industry greater than one acre. This category includes, but is not limited to, manufacturing plants, food processing plants, metal working facilities, printing plants, and fleet storage areas (bus, truck, etc.).

(d) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.

(e) Restaurants. This category is defined as a facility that sells prepared

foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812), where the land area for development is greater than 5,000 square feet. Restaurants where land development is less than 5,000 square feet shall meet all SUSMP requirements except for structural treatment BMP and numeric sizing criteria requirement D.1.d.(6)(c) and hydromodification requirement D.1.g.

(f) All hillside development greater than 5,000 square feet. This category is defined as any development which creates 5,000 square feet of impervious surface which is located in an areas with known erosive soil conditions, where the development will grade on any natural slope that is twenty-five percent or greater.

(g) Environmentally Sensitive Areas (ESAs). All development located within or directly adjacent to or discharging directly to an ESA (where discharges from the development or redevelopment will enter receiving waters within the ESA), which either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10% or more of its naturally occurring condition. "Directly adjacent" means situated within 200 feet of the ESA. "Discharging directly to" means outflow from a storm drainage system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands.

(h) Parking lots 5,000 square feet or more or with 15 or more parking spaces and potentially exposed to urban runoff. Parking lot is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce.

(i) Street, roads, highways, and freeways. This category includes any paved surface that is 5,000 square feet or greater used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

(j) Retail Gasoline Outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day."

Note:

1) **Some thresholds are defined by square footage of impervious area created; others by the total area of the development.**
2) **The City of Chula Vista may choose to designate projects not within the above categories as Priority Development Projects, based on potential impacts to storm water quality.**

3.2 Summary

The City of Chula Vista SUSMP is based on a Countywide Model SUSMP developed collectively by the Copermittees to address post-construction urban runoff pollution from new development and redevelopment projects that fall under "Priority Development Project" categories. The Regional Board approved the Countywide Model SUSMP on March 25, 2009. The Countywide Model SUSMP incorporates a unified Low Impact Development (LID) design procedure. This design procedure integrates site planning and design measures with engineered, small-scale Integrated Management Practices (IMPs) such as bioretention. By following the procedure, applicants can develop a single integrated design, which complies with the complex and overlapping NPDES permit LID requirements, storm water treatment requirements, and runoff peak-and-duration-control (Hydromodification management) requirements.

Along with the detailed design procedure, the Countywide Model SUSMP includes design information and criteria for dispersal of runoff to landscaped areas and for pervious pavements, bioretention facilities, flow-through planters, dry wells, infiltration basins, and cisterns. Bioretention facilities and planter boxes can be designed with an impermeable barrier so that runoff does not saturate native soils; instead, runoff is filtered through an engineered soil mix before being captured in an under-drain and conveyed to off-site storm drains. This configuration may be needed where groundwater is high, is contaminated, where increasing soil moisture may present a hazard to foundations or slope stability, or where local soil characteristics prevent infiltration.

Applicants for development project approvals may choose not to use the unified LID design procedure; however, they will still need to demonstrate compliance with the applicable LID criteria, storm water treatment criteria, and Hydromodification management criteria. The Countywide Model SUSMP requires that runoff be infiltrated or else treated by bioretention facilities, planter boxes, filters, settling ponds, or constructed wetlands. In some special circumstances such as retrofit of existing drainage systems, some pedestrian-oriented developments, and roadway widening projects, where it can be demonstrated that it is not feasible to construct any of these facilities, higher-rate surface bio-filters or higher-rate vault based filtration units may be used.

Applicants for approval of Priority Development Projects must demonstrate compliance with the Hydromodification Management Criteria in the NPDES permit.

Applicants must also incorporate into their project design features to control pollutants from specified on-site sources, such as refuse areas, outdoor storage areas, and vehicle washing and repair facilities. The Countywide Model SUSMP includes a table listing the types of sources to be controlled and for each, the corresponding source control measures required.

While project proponents are encouraged to take advantage of methods and procedures described in the Countywide Model SUSMP to design their BMPs, they are reminded that only City of Chula Vista's Municipal Code Chapter 14.20, Development Storm Water Manual, and this SUSMP set out storm water compliance standards for development projects in Chula Vista.

The current SUSMP is an update of the previous City of Chula Vista SUSMP, dated January 2008, and is intended to develop and implement policies to ensure to the maximum extent practicable that development does not increase pollutant loads from a project site and considers urban runoff flow rates, velocities, and durations. This goal may be achieved through site-specific controls and/or drainage area-based or shared structural treatment controls.

This SUSMP identifies appropriate Best Management Practices (BMPs) for certain designated project types to achieve this goal. In particular, this SUSMP requires the implementation of LID principles and features throughout Priority Development Projects, and limits the use of low efficiency treatment control BMPs. Under this SUSMP, the City of Chula Vista will approve the SUSMP project plan(s) as part of the development plan approval process for discretionary projects, and prior to issuing permits for ministerial projects. To allow flexibility in meeting SUSMP design standards, Treatment Control BMPs may be located on- or off-site, used singly or in combination, or shared by multiple developments, provided that the BMPs address pollutants of concern identified for the project or projects and as approved by the City Engineer on a project-by-project basis.

Applicants must incorporate all necessary permanent BMPs into the project plans prior to submittal, regardless of project type. In addition, projects subject to Priority Development Project (SUSMP) requirements must prepare and submit a Water Quality Technical Report (WQTR) in accordance with Section 4 of this Manual. Analysis of the project's anticipated pollutants of concern, anticipated pollutants of concern in downstream receiving waters, and conditions of concern, must also be included in the WQTR as part of the project submittal.

All new development and significant redevelopment projects that fall into one of the following "Priority Development Project" categories, and have not obtained their Grading, Construction, or Building Permit by March 24, 2009, are subject to the SUSMP requirements included in this Development Storm Water Manual. In the instance where a project feature, such as a parking lot, falls into a priority project category, the entire project footprint is subject to these SUSMP requirements. These categories are:

a. Residential development of 10 units or more
b. Commercial development greater than 1 acre
c. Heavy Industry greater than 1 acre
d. Automotive repair shops
e. Restaurants
f. Hillside development greater than 5,000 square feet

g. Projects located within or directly adjacent to or directly discharging to receiving waters within Environmentally Sensitive Areas that create 2,500 square feet or more of impervious surface or increase the area of imperviousness to 10% or more of its naturally occurring condition
h. Parking Lots 5,000 square feet or more impervious surface or with >15 parking spaces and potentially exposed to urban runoff
i. Streets, roads, highways, and freeways which would create a new paved surface that is 5,000 square feet or greater of impervious surface
j. Retail gasoline outlets 5,000 square feet or more or with a projected Average daily Traffic (ADT) of 100 or more vehicles per day
k. All pollutant generating development projects that result in the disturbance of one acre or more of land. Pollutant generating development projects are those projects that generate pollutants at levels greater than background levels

Limited Exclusion: Trenching and resurfacing work associated with utility projects; resurfacing and reconfiguring surface parking lots and existing roadways; new sidewalk construction, pedestrian ramps, or bike lane on existing roads; and routine replacement of damaged pavement, such as pothole repair are not considered priority projects. Parking lots, buildings and other structures associated with utility projects are subject to SUSMP requirements if one or more of the criteria for the above categories are met.

3.3 Definitions

For the definition of terms used in this section, please refer to Section 9 of this Manual.

3.4 Conflict with Local Practices or Municipal Permit

Where requirements of this SUSMP conflict with established local codes, (e.g., specific language of signage used on storm drain stenciling), the City of Chula Vista may continue the local practice and modify the SUSMP to be consistent with the code, except that to the extent that the standards in the SUSMP are more stringent than those under local codes, then such more stringent standards shall apply.

Where there is a conflict between the requirements of this SUSMP and the Municipal Permit, the more stringent requirement shall apply.

Sections 5 and 10 of this Manual include suggested resources and references to help development project proponents select and design their BMPs. While standards and guidelines established in such documents are generally acceptable to the City of Chula Vista, the City reserves the right to make the final determination as to the applicability of each of the BMPs, standards, methods, criteria, etc. to a specific development or redevelopment project on a case-by-case basis. Where there is a conflict between the requirements of this SUSMP and any of the suggested resources and references, the requirements of this SUSMP shall prevail.

3.5 Implementation

The departments responsible for ensuring SUSMP requirements are implemented and the roles and responsibilities of each department are identified in the City's Jurisdictional Urban Runoff Management Program (JURMP). Project proponents are required to identify SUSMP requirements for their projects by consideration of project review and permitting process described in Section 2 of this Manual and to incorporate appropriate BMPs into the project design. SUSMP requirements should be identified and incorporated in the project design at the earliest possible stage of the project development and review process. However, at a minimum, for discretionary projects, SUSMP requirements shall be incorporated into the project design and shown on the plans prior to decision-maker approval of discretionary permits.

For projects requiring only ministerial permits, SUSMP requirements shall be incorporated into the project design and shown on the plans prior to the issuance of any ministerial permits. City departments carrying out public projects that are not required to obtain permits shall be responsible for ensuring SUSMP requirements are incorporated into the project design and shown on the plans prior to bidding for construction contracts, or equivalent. For public projects SUSMP requirements must be incorporated into the project design and shown on the plans before allowing the project to commence.

Planning Ahead to Avoid the Three Most Common Mistakes

The most common (and costly) errors made by applicants for development approvals with respect to storm water quality compliance are:

a. Not planning for compliance early enough. A strategy for storm water quality compliance should be developed before completing a conceptual site design or sketching a layout of subdivision lots.
b. Assuming proprietary storm water treatment facilities will be adequate for compliance. Most are not.
c. Not planning for periodic inspections and maintenance of treatment and flow control facilities. An Inspection, Operation, and Maintenance Plan shall be developed which identifies the responsible party for facility maintenance in perpetuity together with method of access, funding mechanism, and inspection/maintenance methods and frequencies.

Phased Projects

When determining whether SUSMP requirements apply, a "project" should be defined consistent with California Environmental Quality Act (CEQA) definitions of "project". That is, the "project" is the whole of an action which has the potential for adding or replacing or resulting in the addition or replacement of roofs, pavement, or other impervious surfaces and thereby resulting in increased flows and storm water

pollutants. "Whole of an action" means the project may not be segmented or piecemealed into small parts if the effect is to reduce the quantity of impervious area for any part to below the SUSMP thresholds.

City of Chula Vista may require, as part of an application for approval of a phased development project, a conceptual or master Water Quality Technical Report, which describes and illustrates, in broad outline, how the drainage for the project will comply with the SUSMP requirements. The level of detail in the conceptual or master Water Quality Technical Report should be consistent with the scope and level of detail of the development approval being considered. The conceptual or master Water Quality Technical Report should specify that a more detailed Water Quality Technical Report for each later phase or portion of the project will be submitted with subsequent applications for discretionary approvals.

New Subdivisions

If a Tentative Map approval would potentially entitle future owners to construct new impervious areas or replace existing impervious areas which, in aggregate, could exceed one of the SUSMP thresholds (Priority Development Projects listed in Section D.1.d.(1) and (2) of the Municipal Permit and Section 3.1 of this Manual), then the applicant must submit for City review and approval a WQTR with the Tentative Map application. The findings of said WQTR will be a condition of development, however, any changes to the SUSMP after the Tentative Map's approval and before the issuance of a development permit will require a revised WQTR to meet the new SUSMP requirements at the time the grading permit is issued.

If the WQTR for a Tentative Map does not include improvement plans for portions of the site, the applicant should identify the type, size, location, and final ownership of storm water treatment and flow-control facilities for portions with improvement plans. Such facilities shall be adequate to serve roadways, common areas, and runoff from an expected reasonable estimate of the square footage of future roofs, driveways, and other impervious surfaces on single-family lots. Portions of the site that do not have improvement plans at the time of Tentative Map submittal shall reserve a minimum of 8% of the total area for LID features, or other methods approved by the City Engineer. The City will include Tentative Map conditions of approval for the submittal of additional WQTRs when development permit applications are submitted for the remaining land uses within the project (including multifamily residential, commercial, industrial, parks, schools, etc.); and the implementation of adequate BMPs concurrent with the construction of each sub-project. Such subsequent developments will be required to meet SUSMP requirements even if individually they do not meet the definition of a Priority Development Project.

New subdivision development project proponents are strongly recommended to consider all site potentials and constraints for storm water BMPs for the whole project at the earliest conceptual phase of project planning and design, and explore feasible options in order to avoid subsequent difficulties arising from site constraints.

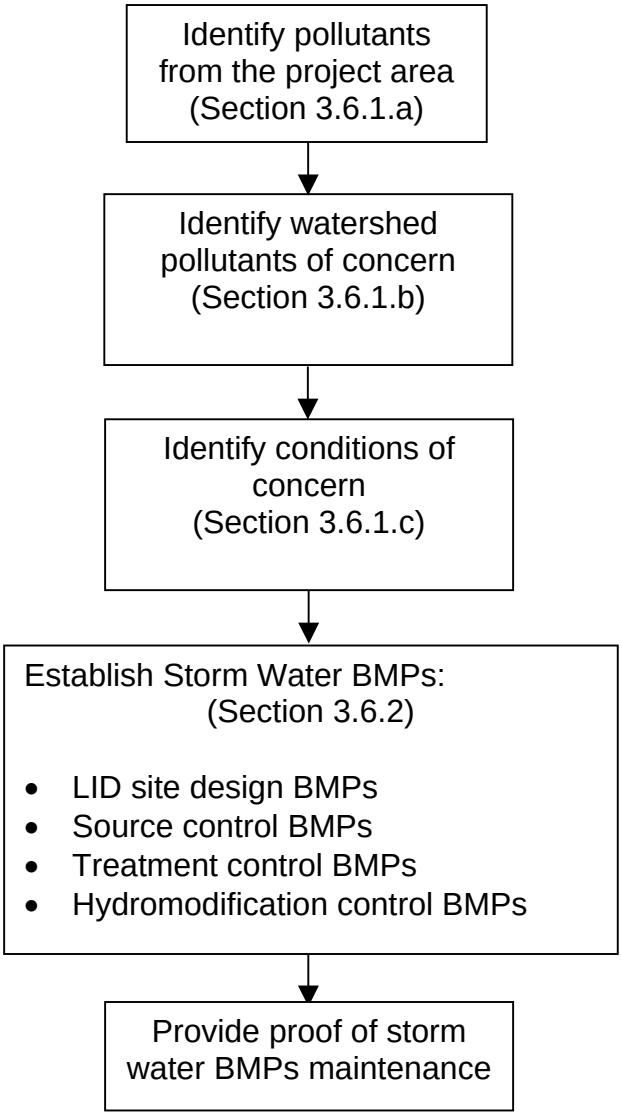
If the City deems it necessary, the future impervious areas of one or more lots may be limited by a Tentative Map condition and CC&Rs. This might be necessary when a project is exempted from one or all SUSMP provisions because the total impervious area is below a threshold, or to ensure runoff from impervious areas added after the project is approved does not overload a storm water treatment and flow-control facility.

In general, in new subdivisions storm water treatment, infiltration, or flow-control facilities should not be located on individual single-family residential lots, particularly when those facilities manage runoff from other lots, from streets, or from common areas. A better alternative is to locate storm water facilities on one or more separate, jointly owned parcels. Projects discharging to publicly maintained storm drainage systems prior to treatment facilities are required to pre-treat runoff before discharging to public systems. Untreated runoff should never be discharged to natural drainage systems or receiving waters.

3.6 Storm Water BMP Selection

This section provides a procedure for identifying a project's pollutants and conditions of concern, and addressing these through site design, source control, and treatment control storm water BMPs. All priority projects shall implement one or a combination of storm water BMPs, including, 1) LID and site design BMPs, 2) source control BMPs and, 3) Treatment Control BMPs after the pollutants and conditions of concern have been identified. Storm water BMPs, from those listed in Sections 5 and 10 shall be considered and implemented where expressly required by the Municipal Permit or, where determined applicable and feasible by the City of Chula Vista. Additional information on BMPs is included in the notes to Table 3.3 and in the references in Sections 5 and 10. The storm water BMPs shall adhere to the requirements in this section and shall be correctly designed so as to remove pollutants to the MEP. A flow chart summarizing the storm water BMP selection procedure is provided in Figure 3.1.

Figure 3.1. Storm Water BMP Selection Flow Chart



3.6.1 Identify Pollutants & Conditions of Concern

Priority project proponents shall use this guidance to identify pollutants and conditions of concern for which they need to mitigate or protect against. Once identified, appropriate control measures for these pollutants and conditions are specified in Section 3.6.2, "Establish Storm Water BMPs." Low Impact Development Site design and Source Control BMPs are required based on site conditions and types as well as pollutant sources commonly associated with the proposed project type (see Sections 3.6.2.a, 3.6.2.b, and Tables 3.3 and 3.4)). Treatment Control BMPs are also required for the project's expected pollutants of concern (see Table 3.5).

Conditions of Concern shall be mitigated by using LID features, detention facilities, or other Hydromodification Control BMPs acceptable to the City (see Section 3.6.2.d).

For private priority projects, the City shall require the information to be provided with the project application prior to being deemed complete. For public priority projects, the City shall approve the information prior to bidding for construction contracts.

General Categories of Water Pollution

Urban runoff from a developed site has the potential to contribute pollutants, including oil and grease, suspended solids, metals, gasoline, pesticides, and pathogens to the storm drainage system and receiving waters. For the purposes of identifying pollutants of concern and associated storm water BMPs, pollutants are grouped in nine general categories as follows:

1. Sediments – Sediments are soils or other surficial materials eroded and then transported or deposited by the action of wind, water, ice, or gravity. Sediments can increase turbidity, clog fish gills, reduce spawning habitat, lower young aquatic organisms survival rates, smother bottom dwelling organisms, and suppress aquatic vegetation growth.
2. Nutrients – Nutrients are inorganic substances, such as nitrogen and phosphorus. They commonly exist in the form of mineral salts that are either dissolved or suspended in water. Primary sources of nutrients in urban runoff are fertilizers and eroded soils. Excessive discharge of nutrients to water bodies and streams can cause excessive aquatic algae and plant growth. Such excessive production, referred to as cultural eutrophication, may lead to excessive decay of organic matter in the water body, loss of oxygen in the water, release of toxins in sediment, and the eventual death of aquatic organisms.
3. Metals – Metals are raw material components in non-metal products such as fuels, adhesives, paints, and other coatings. Primary sources of metal pollution in storm water are typically commercially available metals and metal products. Metals of concern include cadmium, chromium, copper, lead, mercury, and zinc. Lead and chromium have been used as corrosion inhibitors in primer coatings and cooling tower systems. At low concentrations naturally occurring in soil,

metals are not toxic. However, at higher concentrations, certain metals can be toxic to aquatic life. Humans can be impacted from contaminated groundwater resources, and bioaccumulation of metals in fish and shellfish. Environmental concerns, regarding the potential for release of metals to the environment, have already led to restricted metal usage in certain applications.

4. Organic Compounds – Organic compounds are carbon-based. Commercially available or naturally occurring organic compounds are found in pesticides, solvents, and hydrocarbons. Organic compounds can, at certain concentrations, indirectly or directly constitute a hazard to life or health. When rinsing off objects, toxic levels of solvents and cleaning compounds can be discharged to storm drains. Dirt, grease, and grime retained in the cleaning fluid or rinse water may also adsorb levels of organic compounds that are harmful or hazardous to aquatic life.

5. Trash & Debris – Trash (such as paper, plastic, polystyrene packing foam, and aluminum materials) and biodegradable organic matter (such as leaves, grass cuttings, and food waste) are general waste products on the landscape. The presence of trash & debris may have a significant impact on the recreational value of a water body and aquatic habitat. Excess organic matter can create a high biochemical oxygen demand in a stream and thereby lower its water quality. Also, in areas where stagnant water exists, the presence of excess organic matter can promote septic conditions resulting in the growth of undesirable organisms and the release of odorous and hazardous compounds such as hydrogen sulfide.

6. Oxygen-Demanding Substances – This category includes biodegradable organic material as well as chemicals that react with dissolved oxygen in water to form other compounds. Proteins, carbohydrates, and fats are examples of biodegradable organic compounds. Compounds such as ammonia and hydrogen sulfide are examples of oxygen-demanding compounds. The oxygen demand of a substance can lead to depletion of dissolved oxygen in a water body and possibly the development of septic conditions.

7. Oil and Grease – Oil and grease are characterized as high-molecular weight organic compounds. Primary sources of oil and grease are petroleum hydrocarbon products, motor products from leaking vehicles, esters, oils, fats, waxes, and high molecular-weight fatty acids. Introduction of these pollutants to the water bodies are very possible due to the wide uses and applications of some of these products in municipal, residential, commercial, industrial, and construction areas. Elevated oil and grease content can decrease the aesthetic value of the water body, as well as the water quality.

8. Bacteria and Viruses – Bacteria and viruses are ubiquitous microorganisms that thrive under certain environmental conditions. Their proliferation is typically caused by the transport of animal or human fecal wastes from the watershed. Water, containing excessive bacteria and viruses can alter the aquatic habitat and create a harmful environment for humans and aquatic life. Also, the

decomposition of excess organic waste causes increased growth of undesirable organisms in the water.

9. Pesticides – Pesticides (including herbicides) are chemical compounds commonly used to control nuisance growth or prevalence of organisms. Excessive application of a pesticide may result in runoff containing toxic levels of its active component.

a. Identify Pollutants from the Project Area

Table 3.1, associates pollutants with the categories of Priority Development Projects. Pollutants associated with any hazardous material sites that have been remediated or are not threatened by the proposed project are not considered a pollutant of concern.

Table 3.1. Anticipated and Potential Pollutants Generated by Land Use Type.

Priority Project Categories	General Pollutant Categories								
	Sediments	Nutrients	Heavy Metals	Organic Compounds	Trash & Debris	Oxygen Demanding Substances	Oil & Grease	Bacteria & Viruses	Pesticides
Detached Residential Development	X	X			X	X	X	X	X
Attached Residential Development	X	X			X	P(1)	P(2)	P	X
Commercial Development > One Acre	P(1)	P(1)		P(2)	X	P(5)	X	P(3)	P(5)
Heavy industry	X		X	X	X	X	X		
Automotive Repair Shops			X	X(4)(5)	X		X		
Restaurants					X	X	X	X	
Hillside Development >5,000 ft^2	X	X			X	X	X		X
Parking Lots	P(1)	P(1)	X		X	P(1)	X		P(1)
Retail Gasoline Outlets			X	X	X	X	X		
Streets, Highways & Freeways	X	P(1)	X	X(4)	X	P(5)	X		

X = anticipated
P = potential
(1) A potential pollutant if landscaping exists on-site
(2) A potential pollutant if the project includes uncovered parking areas
(3) A potential pollutant if land use involves food or animal waste products
(4) Including petroleum hydrocarbons
(5) Including solvents

Grouping of Pollutants

For the purpose of selecting Treatment Control BMPs, Pollutants of Concern are grouped as coarse sediment and trash, pollutants that tend to associate with fine particles, and pollutants that remain dissolved.

Table 3.2 Grouping of Pollutants

Pollutant	Coarse Sediment and Trash	Pollutants that tend to associate with fine particles during treatment	Pollutants that tend to be dissolved following treatment
Sediment	X	X	
Nutrients		X	X
Heavy Metals		X	
Organic Compounds		X	
Trash & Debris	X		
Oxygen Demanding		X	
Bacteria		X	
Oil & Grease		X	
Pesticides		X	

b. Identify Watershed Pollutants of Concern

Pollutants generated by the proposed Priority Development Project that exhibit one or more of the following characteristics are considered pollutants of concern in receiving waters:

1. Current loadings or historical deposits of the pollutant are impairing the beneficial uses of a receiving water;
2. Elevated levels of the pollutant are found in water or sediments of a receiving water and/or have the potential to be toxic to or bio-accumulate in organisms therein; and,
3. Inputs of the pollutant are at a level high enough to be considered potentially toxic.

To identify pollutants of concern in receiving waters, each Priority Development Project shall, at a minimum, do the following:

1. For each of the proposed project's discharge points, identify the receiving water(s) that each discharge point proposes to discharge to, including hydrologic unit basin number(s), as identified in the most recent version of the *Water Quality Control Plan for the San Diego Basin*[1], prepared by the San Diego Regional Water Quality Control Board.

[1] http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.shtml

2. Identify any receiving waters, into which the developed area would discharge to, listed on the most recent list of Clean Water Act Section 303(d) impaired water bodies[2]. List any and all pollutants for which the receiving waters are impaired.

3. Compare the list of pollutants for which the receiving waters are impaired with the pollutants from the project (as identified in Table 3.1). Any pollutants identified from Table 3.1 that are also causing impairment of receiving waters shall be given special consideration and appropriate BMPs shall be implemented to prevent further impairment of receiving waters.

c. Identify Conditions of Concern

Common impacts to the hydrologic regime resulting from development typically include increased runoff volume and velocity; reduced infiltration; increased flow frequency, duration, and peaks; faster time to reach peak flow; downstream erosion and, water quality degradation. These changes have the potential to permanently impact downstream channel erosion and habitat integrity. A change to a Priority Development Project site's hydrologic regime would be considered a Condition of Concern if the change would impact downstream channel erosion and habitat integrity.

Because of these potential impacts, the City of Chula Vista requires the following steps to be followed for Priority Development Projects, unless the City determines that the project would not result in impact to the hydrologic regime:

1. Evaluate the project's Conditions of Concern in a drainage study report prepared by a Registered Civil Engineer in the State of California, with experience in fluvial geomorphology and water resources management. The report shall consider the project area's location (from the larger watershed perspective), topography, soil and vegetation conditions, percent impervious area, natural and infrastructure drainage features, wet season groundwater depth, and any other relevant hydrologic and environmental factors to be protected specific to the project area's watershed.
2. As part of the drainage study, a qualified, licensed professional shall provide a report on proposed infiltration techniques (trenches, basins, dry wells, permeable pavements with underground reservoir for infiltration) regarding any potential adverse geotechnical concerns. Geotechnical conditions, such as slope stability, expansive soils, compressible soils, seepage, groundwater depth, and loss of foundation or pavement subgrade strength should be addressed, and mitigation measures provided.
3. As part of the drainage study, the Civil Engineer shall conduct a field reconnaissance to observe and report on downstream conditions, including undercutting erosion, slope stability, vegetative stress (due to flooding, erosion, water quality degradation, or loss of water supplies), and the area's susceptibility to erosion or habitat alteration as a result of an altered flow regime.

[2] http://www.swrcb.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/state_usepa_combined.pdf

4. The drainage study shall compute rainfall runoff characteristics from the project area including, at a minimum, peak flow rate, flow velocity, runoff volume, time of concentration, and retention volume. These characteristics shall be developed for the two-year and 10-year frequency, Type I storm, of six-hour or 24-hour duration (whichever is the closer approximation of the site's time of concentration), during critical hydrologic conditions for soil and vegetative cover[3]. The drainage study shall report the project's Conditions of Concern based on the hydrologic and downstream conditions discussed above. Where Conditions of Concern has been identified, the drainage study shall establish that pre-project hydrologic conditions affecting downstream Conditions of Concern would not be increased by the proposed project, satisfactory to the City, by incorporating Low Impact Development and/or Hydromodification controls identified in Section 3.VI.2.

3.6.2 Establish Storm Water BMPs

Low Impact Development Site Design BMPs may reduce the need for Source and/or Treatment Control BMPs, and Source Control BMPs may reduce the amount of Treatment Control BMPs needed. Where required by the Municipal Permit and determined applicable and feasible by the City of Chula Vista, all Priority Development Projects shall select, incorporate, and implement storm water BMPs in the following progression:

- Low Impact Development Site Design BMPs
- Source Control BMPs
- Treatment Control BMPs
- Hydromodification Control BMPs

Priority Development Projects must implement Low Impact Development Site Design BMPs, Source Control BMPs, Treatment Control BMPs, and Hydromodification Control BMPs. A waiver from the requirement of meeting numeric sizing criteria for Treatment Control BMPs may be granted if the project proponent can demonstrate infeasibility and the City Engineer approves such waiver. LID BMPs must meet minimum requirements in Permit section D.1.d.(4). BMPs must also achieve certain performance standards in Permit section D.1.d.(5) and (6). Hydromodification Control BMPs shall be proposed and implemented so that runoff discharge rates, durations, and velocities from Priority Development Projects are controlled to maintain or reduce downstream erosion conditions and protect stream habitat as outlined in Section 3.6.1.c above. Selection of BMPs from the menus included in this SUSMP using the rules set out in this SUSMP must fulfill these requirements.

[3]. Design storms can be found at http://www.wrcc.dri.edu/pcpnfreq.html. In addition, isopluvial maps contained in the County of San Diego Hydrology Manual may be used to extrapolate rainfall data to areas where insufficient data exists. If isopluvial maps are selected, the drainage study shall describe the methodology for using the isopluvial maps.

In addition, runoff treated by Low Impact Development Site Design or Source Control BMPs, such as rooftop runoff treated in landscaping, may be useful in reducing the quantity of runoff to be treated by Treatment Control BMPs. Low Impact Development and Source Control BMPs also help minimize flows that need to be controlled by Hydromodification Control BMPs.

To select a Treatment Control BMP using the Treatment Control BMP Selection Matrix, each Priority Development Project shall compare the list of pollutants for which the downstream receiving waters are impaired (if any) with the pollutants anticipated to be generated by the project (as identified in Table 3.1). Any pollutants identified by Table 3.1, which are also causing a Clean Water Act section 303(d) impairment of the receiving waters of the project, shall be given special consideration and appropriate BMPs shall be implemented to prevent further impairment of receiving waters. Priority Development Projects that are anticipated to generate pollutants for which receiving waters are also identified as impaired shall, in addition to meeting all applicable BMP requirements identified in Section 3.6.2, select a single or combination of storm water BMPs from Table 3.3, which maximizes pollutant removal for the particular pollutant(s).

Alternatively, a project proponent may elect to implement a combination of LID BMPs that either disperse and infiltrate, or direct to bioretention facilities, the flows from all impervious areas on-site. These BMPs are presumed to provide Maximum Extent Practicable treatment for all pollutants from the project area; therefore, no further documentation of the treatment BMP selection process is required.

Priority Development Projects that are <u>not</u> anticipated to generate a pollutant for which the receiving water is Clean Water Act Section 303(d) impaired shall meet applicable standard requirements in Section 3.6.2, and shall select a single or combination of storm water BMPs from Table 3.3 that are effective for pollutant removal of the identified pollutants from the project area, consistent with the "Maximum Extent Practicable" standard defined in Section 9 of this Manual.

Selected BMPs must be effective for the widest range of anticipated and potential pollutants from the project area to be generated by a Priority Development Project (as identified in Table 3.1), consistent with the Maximum Extent Practicable standard.

Treatment Control BMPs with high or medium pollutant removal efficiency for the project's identified pollutants from the project area shall be selected. Treatment Control BMPs with a low removal efficiency ranking will only be approved by the City of Chula Vista when a feasibility analysis has been conducted which exhibits that implementation of Treatment Control BMPs with a high or medium removal efficiency ranking are infeasible. Treatment Control BMPs shall not be constructed within Receiving Waters. Alternative storm water BMPs not identified in Table 3.3 may be approved at the discretion of the City of Chula Vista, provided the alternative BMP is as effective in removal of identified pollutants from the project area as other feasible BMPs with high or medium effectiveness listed in Table 3.4.

The 50% Rule for Previously Developed Projects

Projects on previously developed sites may also need to retrofit drainage of all impervious areas on the entire site. For sites creating or replacing more than 5,000 square feet of impervious area:

a. If the new project results in an increase of, or replacement of, 50% or more of the previously existing impervious surface, and the existing development was not subject to SUSMP requirements, then the entire project must be included in the treatment measure design.
b. If less than 50% of the previously impervious surface is to be affected, only that portion must be included in the treatment measure design.

Entire Project Footprint Subject to SUSMP Requirements

If a Priority Development Project feature such as a parking lot falls into a Priority Development Project category, then the entire project footprint is subject to SUSMP requirements.

Projects Exempt from Treatment BMP Requirements

Projects limited to interior remodels, routine maintenance or repair, roof or exterior wall surface replacement, resurfacing and reconfiguring surface parking lots and existing roadways, new sidewalk construction, pedestrian ramps, or bike lanes on existing roads, and routine replacement of damaged pavement such as pothole repair are not subject to treatment requirements. However, other requirements, including incorporation of appropriate source controls, still apply.

a. Low Impact Development (LID) Site Design BMPs

The NPDES Permit requires LID to be used on all projects to minimize directly connected impervious areas and promote infiltration. LID is an integrated site design methodology that uses small-scale detention and retention to minimize pollutants conveyed by runoff and to mimic pre-project site hydrological conditions. For Priority Development Projects, the minimum standards are:

- Drain a portion of impervious areas into pervious areas, if any.
- Design and construct pervious areas, if any, to effectively receive and infiltrate runoff from impervious areas, taking into account soil conditions, slope, and other pertinent factors.
- Construct a portion of paved areas with low traffic and appropriate soil conditions with permeable surfaces.

Implementation of some Low Impact Development BMPs, if designed properly, can also serve to meet treatment and Hydromodification BMP requirements of the NPDES Permit.

Priority Development Projects shall be designed so as to minimize directly connected impervious surfaces and to promote infiltration using LID techniques. Priority Development Projects shall, to the Maximum Extent Practicable, minimize the introduction of Pollutants of Concern that may result in significant impacts, generated from site runoff to the storm drainage system. Priority Development Projects shall also control post-development peak storm water runoff discharge rates and velocities to maintain or reduce pre-development downstream erosion and to protect stream habitat. Priority Development Projects can address these objectives through the creation of a hydrologically functional project design that attempts to mimic the natural hydrologic regime. Many of these techniques are outlined and reviewed in the County of San Diego's LID Handbook and Appendices. Mimicking a site's natural hydrologic regime can be pursued by:

1. Reducing imperviousness, conserving natural resources and areas, maintaining and using natural drainage courses in the storm drainage system, and minimizing clearing and grading.
2. Providing runoff storage measures dispersed throughout a site's landscape with the use of bioretention facilities and detention, retention, and infiltration practices.

These design principles offer an innovative approach to urban storm water management; one that does not rely on the conventional end-of-pipe or in-the-pipe structural methods but instead uniformly or strategically integrates storm water controls throughout the urban landscape. Useful resources for applying these principles, referenced in Sections 5 and 10, include the San Diego Countywide Model SUSMP (January 2, 2009), the County of San Diego's LID Handbook (2007), Start at the Source (1999), Low-Impact Development Design Strategies (1999), the City of Portland's Storm Water Manual (2004), and the Contra Costa Clean Water Program's Storm Water C.3 Guidebook (2006).

Design Concept LID-1: Minimize Project's Impervious Footprint & Conserve Natural Areas

The following Low Impact Development options shall be considered and, incorporated and implemented where determined applicable and feasible by the City of Chula Vista, during the site planning and approval process, consistent with applicable General Plan policies and other development regulations.

1. Minimize and disconnect impervious surfaces. This can be achieved in various ways, including, but not limited to increasing building density (number of stories above or below ground) and developing land use regulations seeking to limit impervious surfaces. Decreasing the project's footprint can substantially reduce the project's impacts to water quality and hydrologic conditions.

2. Conserve natural areas, soils, and vegetation where feasible. This can be achieved by concentrating or clustering development on the least environmentally sensitive portions of a site while leaving the remaining land in a natural, undisturbed condition. The following list provides a guideline for determining the least sensitive portions of the site, in order of increasing sensitivity. Applicants should also refer to the City's Multiple Species Conservation Plans or other biological regulations, as appropriate.

   - Areas devoid of vegetation, including previously graded areas and agricultural fields.
   - Areas of non-native vegetation, disturbed habitats and eucalyptus woodlands.
   - Areas of chamise or mixed chaparral, and non-native grasslands.
   - Areas containing coastal scrub communities.
   - All other upland communities.
   - Occupied habitat of sensitive species and all wetlands (as both are defined by the City of Chula Vista).
   - All areas necessary to maintain the viability of wildlife corridors.

   Within each of the previous categories, areas containing hillsides (as defined in this Manual) should be considered more sensitive than the same category without hillsides.

3. Construct walkways, trails, patios, overflow parking lots and alleys and other low-traffic areas with permeable surfaces, such as pervious concrete, permeable asphalt, unit pavers, and granular materials.

4. Construct streets, sidewalks and parking lot aisles to the minimum widths necessary, provided that public safety and a walkable environment for pedestrians are not compromised.

5. Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs.

6. Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design.

7. Use natural drainage systems to the maximum extent practicable.

8. Other site design options, which are comparable, and equally effective.

9. Minimize soil compaction.

Design Concept LID-2: Minimize Directly Connected Impervious Areas (DCIAs)

Priority Development Projects shall consider, incorporate, and implement the following design characteristics, where determined applicable and feasible by the City of Chula Vista.

1. Where landscaping is proposed, drain rooftops into adjacent landscaping prior to discharging to the storm drain.

2. Where landscaping is proposed, drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping.

3. Other design characteristics, which are comparable and equally effective.

Design Concept LID-3: Protect Slopes and Channels

Project plans shall include storm water BMPs to decrease the potential for erosion of slopes and/or channels, consistent with local codes and ordinances and with the approval of all agencies with jurisdiction, e.g., the U.S. Army Corps of Engineers, the San Diego Regional Water Quality Control Board, and the California Department of Fish and Game. The following design principles shall be considered, incorporated, and implemented where determined applicable and feasible by the City of Chula Vista:

1. Minimize disturbances to Natural Drainages.

2. Convey runoff safely from the tops of slopes.

3. Vegetate slopes with native or drought tolerant vegetation.

4. Control and treat flows in landscaping and/or other controls prior to reaching existing natural drainage systems.

5. Stabilize permanent channel crossings.

6. Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion. Energy dissipaters shall be installed in such a way as to minimize impacts to receiving waters.

7. Employ other design principles, which are comparable and equally effective as determined by the City Engineer.

The following checklist includes potential Low Impact Development BMPs that may be used to meet Low Impact Development requirements on development and redevelopment projects.

Table 3.3 Low Impact Development BMP Checklist

No.	Low Impact Development BMP
1	Conserve natural areas, including existing trees, other vegetaion, and soils.
2	Construct streets, sidewalks, or parking lot aisles to the minimum widths necessary, provided that public safety and a walkable environment for pedestrians are not compromised.
3	Minimize the impervious footprint of the project.
4	Minimize soil compaction in planned green space (landscaped areas, lawns, etc.) and re-till soils when compacted by grading/construction equipment
5	Minimize disturbances to natural drainages (e.g., natural swales, topographic depressions, etc.)
6	Incorporate landscaped buffer areas between sidewalks and streets
7	Design residential streets for the minimum required pavement widths
8	Minimize the number of residential street cul-de-sacs and incorporate landscaped areas within cul-de-sac centers with curb-cuts to reduce their impervious cover
9	Use open space development that incorporates smaller lot sizes.
10	Increase building density while decreasing the building footprint.
11	Reduce overall lot imperviousness by promoting alternative driveway surfaces and shared driveways that connect two or more homes together
12	Reduce overall imperviousness associated with parking lots by providing compact car spaces, minimizing stall dimensions, incorporating efficient parking lanes, and using pervious materials in spillover parking areas.
13	Increase rainfall infiltration
14	Use permeable materials for private sidewalks, driveways, praking lots, and interior roadway surfaces (examples: hybrid lots, parking groves, permeable overflow parking, etc.)
15	Use curb-cuts to direct pavement runoff into swales, landscaping, and natural areas prior to entering the MS
16	Direct rooftop runoff to pervious areas such as yards, open channels, or vegetated areas, and avoid routing rooftop runoff to the roadway or the storm drainage system
17	Pitch driveways and parking areas toward yards and vegetated areas prior to draining into the MS4
18	Conserve and utilize natural soils and/or use amended soils to encourage light infiltration/percolation
19	Maximize rainfall interception
20	Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs
21	Use cisterns/rain barrels to conserve and re-use rain water
22	Drain rooftops into adjacent landscaping prior to discharging to the storm drain
23	Drain roads, sidewalks, and impervious trails into adjacent landscaping
24	Protect slopes and channels
25	Use natural drainage systems to the maximum extent practicable
26	Plant native or drought tolerant vegetation on slopes
27	Design energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels

b. Source Control BMPs

Based on identification of potential pollutants of concern associated with various types of facilities, design concepts and a Source Control BMP Checklist have been included in this section. This approach ensures appropriate BMPs are applied to potential sources of each pollutant of concern. Project proponents are required to select all applicable Source Control BMPs described in this section; list selected BMPs in the project's Water Quality Technical Report, incorporate selected Source Control BMPs in the project design, and implement and maintain such BMPs in perpetuity.

Design Concept SC-1: Provide Storm Drain System Stenciling and Signage

Storm drain stencils are highly visible source control messages, typically placed directly adjacent to storm drain inlets. The stencils contain a brief statement that prohibits the dumping of improper materials into the storm drainage system. Graphical icons, either illustrating anti-dumping symbols or images of receiving water fauna, are effective supplements to the anti-dumping message. Priority Development Projects shall include the following requirements in the project design.

1. Provide stenciling or labeling of all storm drain inlets and catch basins within the project area with prohibitive language (such as: "NO DUMPING – I LIVE DOWNSTREAM") and/or graphical icons to discourage illegal dumping.
2. Post signs and prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.
3. Maintain legibility of stencils and signs.

Storm drain stenciling and signage within public right-of-way shall be in accordance with Chula Vista Construction Standard CVCS 24 (please see Section 6 of this Manual).

Design Concept SC-2: Design Outdoor Material Storage Areas to Reduce Pollution Introduction

Improper storage of materials outdoors may increase the potential for toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to enter the storm drainage system. Where the Priority Development Project plans include outdoor areas for storage of hazardous materials that may contribute pollutants to the storm drainage system, the following storm water BMPs are required:

1. Hazardous materials with the potential to contaminate urban runoff shall either be: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the storm drainage system; or (2) protected by secondary containment structures such as berms, dikes, or curbs.

2. Storage areas shall be paved and sufficiently impervious to contain leaks and spills.
3. Storage areas shall have a roof or awning to minimize direct precipitation within the secondary containment area.

Design Concept SC-3: Design Trash Storage Areas to Reduce Pollution Introduction

All trash container areas shall meet the following requirements (limited exclusion: detached residential homes):

1. Paved with an impervious surface, designed to not allow run-on from adjoining areas, screened or walled to prevent off-site transport of trash; and
2. Covered with a roof or awning to minimize direct precipitation.
3. Designed in accordance with Chula Vista Municipal Code Section 19.58.340.

Design Concept SC-4: Use Efficient Irrigation Systems & Landscape Design

Priority Development Projects shall design the timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm drainage system. (Limited exclusion: detached residential homes.) In compliance with the Water Conservation in Landscaping Act, the following methods to reduce excessive irrigation runoff shall be considered, and incorporated and implemented where determined applicable and feasible by the City of Chula Vista:

1. Employ rain shutoff devices to prevent irrigation after precipitation.
2. Design irrigation systems to each landscape area's specific water requirements.
3. Use flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
4. Employ other comparable, equally effective methods to reduce irrigation water runoff, as determined by the City Engineer.

Design Concept SC-5: Incorporate Requirements Applicable to Individual Priority Project Categories

Where identified in Table 3.4, the following requirements shall be incorporated into applicable Priority Development Projects during the storm water BMP selection and design process. Projects shall adhere to each of the individual Priority Development Project category requirements that apply to the project (e.g., a restaurant with more than 15 parking spaces would be required to incorporate the requirements for "g. Equipment Wash Areas" and "h. Parking Areas" into the project design).

a. Private Roads

Private roadway drainage shall use at least one of the following (for further guidance, see *Start at the Source* [1999]):

1. Rural swale system: Design street runoff to sheet flow to vegetated swales or gravel shoulders.
2. Urban curb/swale system: Provide periodic curb cuts to allow street runoff to drain to vegetated swale/biofilter;
3. Dual drainage system: Capture first flush in street catch basins and discharge to adjacent vegetated swale or gravel shoulder. Connect high flows directly to storm drainage system.
4. Other methods, which are comparable and equally effective within the project, as determined by the City Engineer.

b. Residential Driveways & Guest Parking

Driveways and private residential parking areas shall use at least one of the following features:

1. Design driveways:
   a. With shared access;
   b. Flared (single lane at street);
   c. Paved only under tires; or,
   d. To drain into landscaping
2. Pave uncovered parking on private residential lots with a permeable surface, or design parking to drain into landscaping.
3. Other features which are comparable and equally effective, as determined by the City Engineer.

c. Dock Areas

Loading/unloading dock areas shall include the following:

1. Cover loading dock areas or design drainage to preclude urban run-on and runoff.
2. Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.
3. Other features which are comparable and equally effective, as determined by the City Engineer.

d. Maintenance Bays

Maintenance Bays shall include the following:

1. Repair/maintenance bays shall be indoors or designed to preclude urban run-on and runoff; and,
2. Repair/maintenance bay drainage systems shall be designed to capture all wash water, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is

prohibited. If required by local sewer agency, obtain an Industrial Waste Discharge Permit.

OR

3. Other features which are comparable and equally effective, as determined by the City Engineer.

e. Vehicle Wash Areas

Priority projects that include areas for washing/steam cleaning of vehicles shall be:

1. Self-contained; or covered with a roof or overhang;
2. Equipped with a clarifier or other pretreatment facility;
3. Properly connected to a sanitary sewer.
4. Other features which are comparable and equally effective, as determined by the City Engineer.

f. Outdoor Processing Areas

Outdoor process equipment operations, such as rock grinding or crushing, painting or coating, grinding or sanding, degreasing or parts cleaning, landfills, waste piles, and wastewater and solid waste treatment and disposal, and other operations determined to potentially threaten water quality by the City of Chula Vista shall adhere to the following requirements.

1. Cover or enclose areas that would be the most significant source of pollutants; or, slope the area toward a dead-end sump; or, discharge to the sanitary sewer system following appropriate treatment in accordance with conditions established by the applicable sewer agency.
2. Grade or berm area to prevent run-on from surrounding areas.
3. Installation of storm drains in areas of equipment repair is prohibited.
4. Other features which are comparable or equally effective, as determined by the City Engineer.

g. Equipment Wash Areas

Outdoor equipment/accessory washing and steam cleaning activities at Priority Development Projects shall:

1. Be self-contained; or covered with a roof or overhang;
2. Be equipped with a clarifier, grease trap or other pretreatment facility, as appropriate;
3. Be properly connected to a sanitary sewer.
4. Other features which are comparable or equally effective as determined by the City Engineer.

h. Parking Areas

To minimize the offsite transport of pollutants from parking areas, the following design concepts shall be considered, and incorporated and implemented where determined applicable and feasible by the City of Chula Vista:

1. Where landscaping is proposed in parking areas, incorporate landscape areas into the drainage design.
2. Overflow parking (parking stalls provided in excess of the City of Chula Vista's minimum parking requirements) should be constructed with permeable paving.
3. Other design concepts, which are comparable and equally effective, as determined by the City Engineer.

i. Roadways

Priority roadway projects shall select Treatment Control BMPs following the treatment control selection procedure identified in Section 3.VI.2, "Establish Storm Water BMPs"

j. Fueling Area

Non-retail fuel dispensing areas shall contain the following:

1. Overhanging roof structure or canopy. The cover's minimum dimensions must be equal to or greater than the area within the grade break. The cover must not drain onto the fuel dispensing area and the downspouts must be routed to prevent drainage across the fueling area. The fueling area shall drain to the project's Treatment Control BMP(s) prior to discharging to the storm drainage system.
2. Portland cement concrete paving (or equivalent smooth impervious surface). The use of asphalt concrete shall be prohibited.
3. Appropriate slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of urban runoff.
4. At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.

More stringent standards may be required by other regulating agencies, in which case the development shall meet those more stringent requirements.

k. Hillside Landscaping

Hillside areas, as defined in this Manual, that are disturbed by project development shall be landscaped with deep-routed, drought tolerant plant species selected for erosion control, satisfactory to the City of Chula Vista.

Table 3.4 Source Control BMP Checklist

Pollutant Source	Permanent Source Control BMPs	Operational Source Control BMPs
On-site storm drain inlets	Mark all inlets with the words "No Dumping. Drains to Bay" or similar.	Maintain and periodically repaint or replace inlet markings. Provide storm water pollution prevention information to new property owners, lessees, or operators. See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com Include the following in lease agreements: "Tenant shall not dump anything into storm drains or store or deposit materials so as to create a potential discharge to storm drains."
Interior floor drains and elevator shaft sump pumps	Interior floor drains and elevator shaft sump pumps shall be plumbed to sanitary sewer.	Inspect and maintain drains to prevent blockages and overflow.
Interior parking garages	Parking garage floor drains shall be plumbed to the sanitary sewer.	Inspect and maintain drains to prevent blockages and overflow.
Need for future indoor & structural pest control	Implement building design features that discourage entry of pests.	Provide Integrated Pest Management information to owners, lessees, and operators.
Landscape/ Outdoor Pesticide Use	Implement all of the following: Preserve existing native trees, shrubs, and ground cover to the maximum extent possible. Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to storm water pollution. Where landscaped areas are used to retain or detain storm water, specify plants that are tolerant of saturated soil conditions. Consider using pest-resistant plants, especially adjacent to hardscape.	Maintain landscaping using minimum or no pesticides. See applicable operational BMPs in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com Provide IPM information to new owners, lessees and operators.

Pollutant Source	Permanent Source Control BMPs	Operational Source Control BMPs
	To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	
Pools, spas, ponds, decorative fountains, and other water features		See applicable operational BMPs in Fact Sheet SC-72, "Fountain and Pool Maintenance, " in the CASAQ Stormwater Quality Handbooks at www.cabmphandbooks.com
Food service	Provide designated indoor cleaning areas, sized to ensure that the largest items can be accommodated. Floor drains in cleaning areas shall be connected to a grease interceptor before discharging to the sanitary sewer. Floor drains in cleaning areas shall not be connected to storm drains. Floor mats, containers, equipment, and other similar items shall be cleaned only in these areas.	Maintain designated cleaning areas in a clean condition at all times. Provide spill kits where detergents and other cleaning products are stored.
Refuse areas	Provide adequate number of waterproof trash containers. Containers should be equipped with lids that can be closed when not in use. Locate containers indoors or in enclosures with solid roof. The Chula Vista Municipal Code requires new commercial trash enclosures to have solid roofs. Pave and grade trash enclosure areas to prevent run-on and provide berms where necessary to prevent runoff from the area. Post signs on or near dumpsters with the words "Do not dump hazardous materials here" or similar. Do not provide drains in trash enclosure areas.	Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Inspect and pick up litter daily and clean up spills immediately. Trash enclosures shall be cleaned only by sweeping or power washing. Power washing waste shall be collected. Do not allow power washing waste water to enter storm drain systems. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at http://www.cabmphandbooks.com/

Pollutant Source	Permanent Source Control BMPs	Operational Source Control BMPs
Industrial processes.	If industrial processes are to be located on site, all process activities shall be performed indoors. No processes shall drain to exterior or to storm drain system.	See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
Outdoor storage of equipment or materials.	Storage areas shall include structural features that prevent pollutants from entering storm drains. Where appropriate, comply with the requirements of local Hazardous Materials Programs for: • Hazardous Waste Generation • Hazardous Materials Release Response and Inventory • California Accidental Release (CalARP) • Aboveground Storage Tank • Uniform Fire Code Article 80 Section 103(b) & (c) 1991 • Underground Storage Tank Grade and berm outdoor storage areas to prevent run-on or run-off from area. Areas for outdoor storage of non-hazardous liquids shall be covered by a roof and contained by secondary containment such as berms, dikes, liners, or vaults. Storage of hazardous materials and wastes shall be in compliance with federal, state, and local laws, ordinances, and regulations.	See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC33, "Outdoor Storage of Raw Materials " in the CASQA Stormwater Quality Handbooks at: www.cabmphandbooks.com
Vehicle and Equipment Cleaning	If a car wash area is not provided, take measures to discourage on-site car washing. Commercial/industrial facilities having vehicle/equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses. Multi-dwelling complexes are encouraged to have a paved, bermed, and covered carwash area. Such areas	Implement the following (if applicable): Wash water from vehicle and equipment washing operations shall not be discharged to the storm drain system. Car dealerships and similar may rinse cars with water only. No discharge shall be allowed into storm drain systems. See Fact Sheet SC-21, "Vehicle and Equipment Cleaning," in the CASQA Stormwater Quality Handbooks at

Pollutant Source	Permanent Source Control BMPs	Operational Source Control BMPs
	shall drain to landscaping or the sanitary sewer system. Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or run-off from the area. Commercial carwash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.	www.cabmphandbooks.com
Vehicle/Equipment Repair and Maintenance	All vehicle or equipment repair shall be conducted indoors. Any outdoor vehicle or equipment repair is subject to prior approval by the City of Chula Vista and the implementation of adequate BMPs to prevent run-on and run-off of storm water. Floor drains in repair areas shall not be connected to storm drainage systems. Connection of floor drains in repair areas to the sanitary sewer system requires prior approval by the City of Chula Vista Wastewater Engineering Section. No tanks, containers, or sinks connected to the sanitary sewer system shall be used for cleaning or rinsing vehicle or equipment parts unless permitted by the City of Chula Vista Wastewater Engineering Section.	No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinse water from parts cleaning into storm drains. No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately. No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.
Fuel Dispensing Areas	Fueling areas shall have impermeable floors (i.e., Portland Cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of storm water to the maximum extent practicable. Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. Alternatively, the fueling area must be covered and the cover's minimum	The fueling area shall be dry swept routinely as needed. See the Business Guide Sheet, "Automotive Service-Service Stations" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

Pollutant Source	Permanent Source Control BMPs	Operational Source Control BMPs
	dimensions must be equal to or greater than the area within the grade break or fuel dispensing area. The canopy (or cover) shall not drain onto the fueling area.	
Loading Docks	Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct storm water away from the loading areas. Water from loading dock areas should be drained or pumped to landscape areas where feasible. Direct connections to storm drains from depressed loading docks are prohibited. Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.	Move loaded and unloaded items indoors as soon as possible. See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
Fire Sprinkler Test Water	Provide a means to drain fire sprinkler test water to the sanitary sewer or landscaping.	See the note in Fact Sheet SC-41, "Building and Grounds Maintenance" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
Miscellaneous Drain or Wash Water - Boiler drain lines - Condensate drain lines - Rooftop equipment - Drainage sumps - Roofing, gutters, and trim.	Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system. Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system. Rooftop mounted equipment with potential to produce pollutants shall be roofed and/or have secondary containment. Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water. Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.	
Plazas, sidewalks, and parking lots.		Plazas, sidewalks, and parking lots shall be swept regularly to prevent the accumulation of litter and debris.

Pollutant Source	Permanent Source Control BMPs	Operational Source Control BMPs
		Debris from pressure washing shall be collected to prevent entry into the storm drain system. Wash-water containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer, if permitted by the City of Chula Vista Wastewater Engineering Section. It shall not be discharged to a storm drain system.

c. Treatment Control BMPs

Minimizing a development's detrimental effects on water quality can be most effectively achieved through the use of a combination of Low Impact Development Site Design, Source Control, Treatment Control, and Hydromodification Control BMPs. Where projects have been designed to minimize, to the maximum extent practicable, the introduction of anticipated Pollutants of Concern that may result in significant impacts to the receiving waters through the implementation of Low Impact Development Site Design and Source Control BMPs, the development would still have the potential for Pollutants of Concern to enter the storm drainage system. Therefore, priority projects shall be designed to remove Pollutants of Concern from the storm drainage system to the Maximum Extent Practicable through the incorporation and implementation of Treatment Control BMPs.

In meeting the requirements in this section, Priority Development Projects shall implement a single or combination of storm water BMPs that will remove anticipated Pollutants of Concern, as identified by the procedure in Section 3.VI.1, in site runoff to the Maximum Extent Practicable. Treatment Control BMPs with a high or medium pollutant removal efficiency for the project's most significant category of pollutant shall be selected. The City of Chula Vista may approve Treatment Control BMPs with a low removal efficiency ranking only under exceptional circumstances and after the project proponent has conducted a feasibility analysis which exhibits that implementation of Treatment Control BMPs with a high or medium removal efficiency ranking are infeasible.

The following types of facilities have been determined to be appropriate for treatment of runoff potentially containing most pollutants of concern. These types of facilities can generally be used for storm water treatment for all land uses, except where site-specific constraints make them infeasible as approved by the City.

- Infiltration facilities or practices, including dry wells, infiltration trenches, infiltration basins, and other facilities that infiltrate runoff to native soils (sized to detain and infiltrate a volume equivalent to the 85th percentile 24-hour event.)

- Bioretention facilities and media filters that detain storm water and filter it slowly (at the rate of about 5 inches per hour) through soil or sand (sized with a surface area of at least 0.04 times the effectively impervious tributary area, or as approved by the City Engineer.)

- Extended detention basins, wet ponds, and wetlands or other facilities using settling (sized to detain a volume equivalent to runoff from the tributary area generated by the 85th percentile 24-hour event.)

Table 3.5 includes a general comparison of how various types of treatment facilities perform for each group of pollutants. Treatment Control BMPs shall be selected from Table 3.5 in priority order from higher to lower ranking. Where lower ranking BMPs are selected, infeasibility of higher-ranking BMPs shall be demonstrated to the satisfaction of the City.

Table 3.5: Relative Effectiveness and Ranking of Treatment Control BMPs

Pollutants of Concern	a. Bioretention Facilities (LID)	b. Settling Basins (Dry Ponds)	c. Wet Ponds and Wetlands	d. Infiltration Facilities or Practices (LID)	e. Media Filters	f. High-rate biofilters	g. High-rate media filters	h. Hydro-dynamic Devices	i. Vegetated Swales
Coarse Sediment and Trash	High	High	High	High	High	High	High	High	High
Pollutants that tend to associate with fine particles during treatment	High	High	High	High	High	Med.	Med.	Low	Med.
Pollutants that tend to be dissolved following treatment	Med.	Low	Med.	High	Low	Low	Low	Low	Low
Overall Ranking **1 (High)** **5 (Low)**	**2**	**3**	**2**	**1**	**3**	**4**	**4**	**5**	**4**

Notes on Treatment Control BMP Categories:

Effectiveness of all facilities assumes proper sizing, design, and periodic maintenance. Following are general descriptions of each category:

a. **Bioretention Facilities** (infiltration planters, flow-through planters, bioretention areas, and bioretention swales). Facilities are designed to capture runoff and infiltrate slowly (at the rate of about 5 inches per hour) through soil media, which also supports vegetation. Bioretention facilities, except for flow-through planters, effectively promote infiltration into native soils. In low-permeability soils such as clay soils, facilities may capture excess treated runoff in an underdrain

piped to the municipal storm drain system. Typical criteria: an infiltration surface area at least 4% of tributary impervious area, 6-inch average depth of top reservoir, 18-inch soil layer, 12-inch to 18-inch gravel subsurface storage layer, or as approved by the City Engineer.

b. & c. Settling Basins and Wetlands (extended detention basins, "wet" basins, decorative or recreational lakes or water features also used for storm water treatment, constructed wetlands). Facilities are required to be designed to capture the 24-hour 85^{th} percentile storm event and detain its runoff for a minimum of 48 hours (minimum detention time of 48 hours for the runoff produced by the 24-hour 85^{th} percentile storm). Some wetland designs have proven effective in removing nutrients, but performance varies.

d. Infiltration Facilities or Practices (infiltration basins, infiltration trenches, dry wells, dispersal of runoff to landscape, pervious pavements). These facilities and landscape elements should be designed to capture, retain, and infiltrate the flow or volume of runoff that would enter the facility or landscape feature from the 85^{th} percentile storm event. Infiltration facilities are generally only feasible in permeable (Hydrologic Soil Group A or B) soils. Volume and area of infiltration facilities depends on soil permeability and safety factor used. Typical criteria: Infiltration facilities shall have pretreatment to remove silt to prolong life of the facility. A 10-foot vertical separation from average seasonal groundwater depth is required. Dispersal to landscape may be accomplished in any soil type and generally requires a maximum 2:1 ratio impervious: pervious and concave topography to ensure the first 1-inch of rainfall is retained.

e. Media Filters (sand filters). Filters designed to treat runoff produced by a rainfall of 0.2 inches per hour (or 2×85^{th} percentile hourly rainfall intensity) by slow infiltration through sand or other media. Typical criteria: Surface-loading rate not to exceed 5 inches/hour. Entire surface of the sand must be accessible for maintenance.

f. High Rate Biofilters (tree wells, typically proprietary). Biofilters with specially designed media to rapidly filter runoff while removing some pollutants. Some proprietary High Rate Biofilters recommend surface loading rates of up to 100 inches/hour.

g. High-rate Media Filters (typically proprietary). Vaults with replaceable cartridge filters filled with inorganic media.

h. Hydro-dynamic Devices (typically proprietary) including vortex separators and continuous deflection devices are less effective means of storm water treatment.

i. Vegetated Swales. The conventional swale design uses available on-site soils and does not include an underdrains system. Treatment occurs as runoff flows through grass or other vegetation before exiting at the downstream end. Consider using linear-shaped bioretention areas in place of conventional vegetates swale for higher effectiveness in pollutant removal.

The following types of Treatment Control BMPs are less effective in removing typical pollutants from urban runoff, and may only be used in exceptional cases to augment more effective treatment facilities or sometimes used alone when more effective facilities have been deemed infeasible at the City's discretion.

Drainage Inserts have low effectiveness in removing pollutants that tend to associate with fine particles and have medium effectiveness in removing coarse sediment and trash.

Oil/water separators (water quality inlets) are less effective means of storm water treatment, although they may be used in series with more effective facilities.

Underground vaults typically lack the detention time required for settling of fine particles associated with storm water pollutants. They also require frequent maintenance and may retain stagnant water, potentially providing harborage for mosquitoes. Because vaults may be "out of sight, out of mind," experience shows that the required maintenance may not occur.

Treatment Control BMP Design Standards

All Priority Development Projects shall design, construct and implement Treatment Control BMPs that meet the design standards of this section, unless specifically exempted by the limited exclusions below:

1. Proposed restaurants, where land development is less than 5,000 square feet shall meet all SUSMP requirements except for Treatment Control BMPs, numeric sizing criteria, and Hydromodification Control requirements.

2. Where redevelopment results in an increase of less than 50 percent of the impervious surfaces of a previously existing development, and the existing development was not subject to SUSMP requirements, the numeric sizing criteria discussed in this Section apply only to the addition, and not to the entire development.

Treatment Control BMPs required by this Section shall be operational prior to the use of any dependent development.

Design Standard TC-1: Treatment Control BMP Selection

All Treatment Control BMPs for Priority Development Projects shall, at a minimum:

1. Have high or medium pollutant removal efficiency for the project's most significant category of pollutants of concern as determined from Table 3.5. The last row in Table 3.5 shows overall rankings for Treatment Control BMP types. BMPs shall be selected in priority order from higher to lower rankings. Where lower ranking BMPs are selected, infeasibility of higher-ranking BMPs shall be demonstrated to the satisfaction of the City.

2. Target removal of Pollutants of Concern from urban runoff.

3. Treatment Control BMPs with low removal efficiencies may only be approved to augment more effective treatment facilities or under exceptional circumstances to where more effective facilities have been determined to be infeasible by the City.

Design Standard TC-2: Numeric Sizing

Most runoff is produced by frequent storms of small or moderate intensity and duration. Treatment facilities are designed to treat smaller storms and the first flush of larger storms, approximately 80% of average annual runoff.

Depending on the type of Treatment Control BMPs selected for the project, either volume-based or flow-based numeric sizing methods shall be used as follows:

1. Volume-based Treatment Control BMPs shall be designed to mitigate (infiltrate, filter, or treat) the volume of runoff produced from a 24-hour 85th percentile storm event, as determined from the County of San Diego's 85th Percentile Precipitation Isopluvial Map. As shown on the map, rainfall depths vary from about 0.55" to 1.55".

2. Flow-based Treatment Control BMPs shall be designed to mitigate (infiltrate, filter, or treat) either: a) the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour, for each hour of a storm event; or b) the maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity (for each hour of a storm event), as determined from the local historical rainfall record, multiplied by a factor of two. For flow-based facilities, the Municipal Permit specifies the rational method be used to determine flow.

It is typically found that both methods yield similar results.

The 0.2 inches per hour criterion is the basis for a consistent countywide sizing factor for bioretention facilities when used for storm water treatment only (i.e., not for flow control). The factor is based on maintaining a minimum percolation rate of 5 inches per hour through the engineered soil mix. The sizing factor is the ratio of the design intensity of rainfall on tributary impervious surfaces (0.2 inches/hour) to the design percolation rate in the facility (5 inches/hour), or 0.04 (dimensionless).

Design Standard TC-3: Treatment Control BMP location

Treatment Control BMPs shall not be located within receiving waters unless all necessary permits have been obtained from resource agencies.

Treatment Control BMPs shall be located close to pollutant sources to minimize costs and maximize pollutant removal prior to runoff entering receiving waters. Such BMPs may be located on- or offsite, used singly or in combination, or shared by multiple new developments, pursuant to the following requirements:

a. All Treatment Control BMPs shall be located so as to infiltrate, filter, and/or treat the required runoff volume or flow prior to its discharge to any receiving water body supporting beneficial uses.

a. Multiple post-construction Treatment Control BMPs for a single Priority Development Project shall collectively be designed to comply with these design standards.

c. Treatment BMPs shall be located within project boundaries, where feasible. However, the City of Chula Vista may approve off-site locations for 1) regional treatment BMPs, or 2) alternative mitigation. Alternative mitigation consists of treating runoff from an area other than the project areas. Alternative mitigation can

be used only for certain infill, redevelopment, or street improvement projects, where site constraints make on-site treatment infeasible. Off-site treatment BMPs must, at a minimum, meet the following criteria:

1. The off-site treatment area shall be located upstream and outside of any receiving water;

2. The off-site treatment area shall be located within the proximity of the project;

3. The off-site treatment area shall discharge to the same receiving water as the project;

4. The alternative mitigation area shall be equivalent to or greater than, the project footprint;

5. The alternative mitigation area shall have an equivalent or greater impervious surface area than the project;

6. The alternative mitigation area shall have an equivalent or greater pollutant load than the project;

7. LID Site Design and Source Control BMPs (Section 3.6.2.a & b) shall be required in the project design; and,

8. Alternative mitigation shall be limited to redevelopment, infill, or street improvement projects.

Design Standard TC-4: Shared or Interim Treatment Control BMPs

The City may approve shared or Interim Treatment Control BMPs subject to the following standards:

1. Shared storm water BMPs shall be operational prior to the use of any dependent development or phase of development. The shared BMPs shall only be required to treat the dependent developments or phases of development that are in use.

2. Interim storm water BMPs that provide equivalent or greater treatment than is required by these design standards may be implemented by a dependent development until each shared BMP is operational. If interim BMPs are selected, the BMPs shall remain in use until permanent BMPs are operational.

Design Standard TC-5: Restrictions on Use of Infiltration BMPs

Three factors significantly influence the potential for urban runoff to contaminate ground water. They are (i) pollutant mobility, (ii) pollutant abundance in urban runoff, (iii) and

soluble fraction of a pollutant. The risk of contamination of groundwater may be reduced by pretreatment of urban runoff. A discussion of limitations and guidance for infiltration practices is contained in, *Potential Groundwater Contamination from Intentional and Non-Intentional Stormwater Infiltration, Report No. EPA/600/R-94/051, USEPA (1994).*

To protect groundwater quality, the City of Chula Vista may apply restrictions to the use of any BMPs that are designed to primarily function as centralized infiltration devices (such as large infiltration basins, large infiltration trenches, unlined retention basins, and unlined or open-bottomed vaults or boxes installed below grade (dry wells)). As additional ground water basin data is obtained, the City may develop additional restrictions on the use of any BMPs that allow incidental infiltration. At a minimum, use of Treatment Control BMPs that are designed to primarily function as centralized infiltration devices shall meet the following conditions, unless it is demonstrated that a restriction is not necessary to protect groundwater quality[4]:

1. Urban runoff shall undergo pretreatment such as sedimentation or filtration prior to infiltration.
2. All dry weather flows containing significant pollutant loads shall be diverted from infiltration devices.
3. Pollution prevention and Source Control BMPs shall be implemented at a level appropriate to protect groundwater quality at sites where Infiltration Treatment Control BMPs are to be used.
4. Infiltration Treatment Control BMPs shall be adequately maintained so that they remove pollutants to the MEP.
5. The vertical distance from the base of any infiltration Treatment Control BMP to the seasonal high groundwater mark shall be at least 10 feet. Where groundwater basins do not support beneficial uses, this vertical distance criterion may be reduced, provided groundwater quality is maintained.
6. The soil through which infiltration is to occur shall have physical and chemical characteristics (such as appropriate cation exchange capacity, organic content, clay content, and infiltration rate) which are adequate for proper infiltration durations and treatment of urban runoff for the protection of groundwater beneficial uses.
7. Infiltration Treatment Control BMPs shall not be used for areas of industrial or light industrial activity; areas subject to high vehicular traffic (25,000 or greater average daily traffic on main roadway or 15,000 or more average daily traffic on any intersecting roadway); automotive repair shops; car washes; fleet storage areas (bus, truck, etc.); nurseries[5]; and other high threat to water quality land uses and activities as designated by the City of Chula Vista.
8. Infiltration Treatment Control BMPs shall be located a minimum of 100 feet horizontally from any water supply well.

[4]. These conditions do not apply to structural treatment BMPs which allow incidental infiltration and are not designed to primarily function as infiltration devices (such as grassy swales, detention basins, vegetated buffer strips, constructed wetlands, etc.)

[5] Except with regard to treated nursery runoff or clean storm water runoff.

In addition, infiltration devices are not recommended where:

- The infiltration device would receive drainage from areas where chemicals are used or stored, where vehicles or equipment are washed, or where refuse or waste are handled.
- Surface soils or groundwater are polluted.
- The facility could receive sediment-laden runoff from disturbed areas or unstable slopes.
- Increased soil moisture could affect the stability of slopes of foundations.
- Soils are insufficiently permeable to allow the device to drain within 72 hours.

Where infiltration BMPs are authorized, their performance shall be evaluated for impacts to groundwater quality. The City of Chula Vista may impose, on a case-by-case basis, additional restrictions on the use of Treatment Control BMPs that are designed to primarily function as centralized infiltration devices. The City will consider the Municipal Permit Section C.1.g. requirements to control the contribution of pollutants from one portion of the watershed to another portion of the watershed through interagency agreements. In those instances where the City may determine that implementation of proposed infiltration BMPs within its jurisdiction has a potential impact to groundwater quality in another jurisdiction, the City may include a notification requirement be placed upon those proposing such use in addition to the above protection measures.

Waiver of Treatment Control BMPs Numeric Sizing Requirements

Treatment Control BMPs must be sized according to the design standards included in this Manual, unless the City grants a waiver to the project based on infeasibility. If infeasibility can be demonstrated to the satisfaction of the City, the project's requirement of meeting numeric sizing criteria (Sections D.1.d.(6)(c) or D.1.d.(8)(a)iii of the Municipal Permit) may be waived. The City will only grant a waiver of infeasibility when the City is satisfied that all available options have been considered and appropriately rejected as infeasible. The City will notify the Regional Board within 5 days of each waiver issued.

Waivers may only be granted as to the requirements for Treatment Control BMP sizing requirements. Priority Development Projects, whether or not granted a waiver may not cause or contribute to an exceedance of water quality objectives. Pollutants in runoff from projects granted a waiver must still be reduced to the maximum extent practicable.

The City has the discretion to implement a Treatment Control BMP waiver program. If the City chooses to implement a Treatment Control BMP waiver program, it may also develop a Treatment Control BMP waiver impact fee program, to require project proponents who have received waivers to transfer the savings in cost, or a proportionate share thereof, as determined by the City, to a storm water mitigation fund. The City will notify the Regional Board if a waiver impact fee program is developed pursuant to this SUSMP. Further details for any Treatment Control BMP waiver impact

fee program may be set out in supplemental submissions of this Manual if multiple jurisdictions establish a joint mitigation fund program for San Diego Bay watershed.

This SUSMP does not preclude the City, acting alone or in partnership with other agencies, from imposing any other fees or charges on development projects that are permitted by law, or from managing or expending the monies received from such non-SUSMP programs in any manner authorized by law.

d. Hydromodification Management BMPs

Priority Development Projects must be designed so that runoff rates and durations are controlled to maintain or reduce downstream erosion conditions and protect stream habitat. In order to comply with this requirement; Priority Development Projects shall meet the requirements of the Interim Hydromodification Criteria (IHC) as described in this section.

The Copermittees of San Diego County are currently developing a Hydromodification Management Plan (HMP), which is anticipated to come into effect by mid 2010. The HMP will supersede current requirements under the IHC. New requirements will apply to Priority Development Projects that have not obtained their Grading, Construction, or Building Permit, whichever comes first, by the effective date of the HMP.

In the meantime, projects resulting in soil disturbance of less than 50 acres, can meet Permit requirements by implementing Low Impact Development design. Hydrologic Conditions of Concern for such projects shall be evaluated in a hydrology study as described in Section 3.6.1.c. Such study shall establish that pre-project hydrologic conditions affecting downstream Conditions of Concern would be maintained by the proposed project, satisfactory to the City, by incorporating Low Impact Development, Source Control, and Treatment Control BMPs identified in Section 3.6.2.

Priority Development Projects disturbing 50 acres or more shall meet Interim Hydromodification Criteria described below. For such projects, the following conditions shall be satisfied:

1. Priority Development Project post-project runoff flow rates and durations shall not exceed pre-project runoff flow rates and durations (Interim Hydromodification Criteria), where the increased discharge flow rates and durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses, attributable to changes in flow rates and durations.
2. Priority Development Projects disturbing 50 acres or more shall implement hydrologic controls to manage post-project runoff flow rates and durations as required by the Interim Hydromodification Criteria.

Interim Hydromodification Criteria

Priority Development Projects disturbing 50 acres or more are required to comply with the following Interim Hydromodification Criteria (IHC) requirements.

The purpose of the IHC is to prevent development related changes in storm water runoff from causing, or further accelerating, stream channel erosion or other adverse impacts to beneficial stream uses. This goal is achieved by limiting Priority Development Project post-project runoff flow rates and durations to pre-project runoff flow rates and durations for a range of runoff flow rates. Two compliance options are provided:

1. Curve matching based on continuous simulation modeling. In this method, a continuous simulation hydrologic computer model such as USEPA's Hydrograph Simulation Program Fortran (HSPF) is used to simulate pre-project and post-project runoff, including the effect of proposed Integrated Management Practices (IMPs), detention basins, or other storm water management facilities to demonstrate the standard is achieved.
2. Implementation of Integrated Management Practices to manage Hydromodification impacts, using design procedures, criteria, and sizing factors (ratios of IMP volume or area to tributary area). Such criteria are currently being developed by the Copermittees and until they are available, project proponents may use curve-matching methods as described above.

The range of flows to be managed is expressed as a percentage of the 5-year peak flow (Q_5) based on the understanding that dominant discharge from Southern California streams is in the vicinity of Q_5. The following IHC shall be used:

1. Estimated post-project runoff durations and peak flows shall not exceed pre-project durations and peak flows as described below. The project proponent must use a continuous simulation hydrologic computer model such s USEPA's Hydrograph Simulation Program Fortran (HSPF) to simulate pre-project and post-project runoff, including the effect of proposed LID IMPs, detention basins, or other Hydromodification control measures. To use this method, the project proponent shall compare the pre-project and post-project model output for a rainfall record of at least 30 years, and shall show the following criteria are met:

    a. For flow rates from 20% of the pre-project 5-year runoff event ($0.2Q_5$) to the pre-project 10-year runoff event (Q_{10}), the post-project discharge rates and durations shall not deviate above the pre-project rates and durations by more than 10% over more than 10% of the length of the flow duration curve.
    b. For flow rates from $0.2Q_5$ to Q_5, the post-project peak flows shall not exceed pre-project peak flows. For flow rates from Q_5 to Q_{10}, post-project peak flows may exceed pre-project flows by up to 10% for a 1-

year frequency interval. For example, post-project flows could exceed pre-project flows by up to 10% for the interval from Q_9 to Q_{10} or from $Q_{5.5}$ to $Q_{6.5}$ but not from Q_8 to Q_{10}.

2. Implementation of Low Impact Development Integrated Management Practices (LID IMPs). The project proponent may implement LID IMPs to manage Hydromodification impacts, using design procedures, criteria, and sizing factors (ratios of LID IMP volume or area to tributary area) satisfactory to the City.

Development projects disturbing 50 acres or more are exempt from this requirement when:

a. The project would discharge into channels that are concrete-lined or significantly hardened (e.g., with rip-rap, sackcrete, etc.) downstream to their outfall in bays or the ocean;
b. The project would discharge into underground storm drains discharging directly to bays or the ocean; or
c. The project would discharge to a channel where the watershed areas below the project's discharge points are highly impervious (e.g., >70%).

A summary of discussions and calculations regarding Conditions of Concern and Interim Hydromodification Criteria from the hydrology study shall be included in the Water Quality Technical Report submitted for the Priority Development Project.

3.7 Provide Proof of Storm Water BMP Maintenance

The City of Chula Vista will not consider structural BMPs to be "effective" and, therefore, shall not accept storm water BMPs as meeting the MEP standard, unless a mechanism is in place that will ensure ongoing long-term maintenance of all structural BMPs. This mechanism can be provided by the City or by the project proponent. As part of project review, if a project proponent is required to include interim or permanent structural BMPs in project plans, and if the City does not provide a mechanism for BMP maintenance (such as the establishment of a Community Facility District, or CFD), the City will require that the applicant provide verification of maintenance requirements through such means as may be appropriate, at the discretion of the City of Chula Vista, including, but not limited to covenants, legal agreements, maintenance agreements, and/or conditional use permits.

Maintenance Mechanisms

1. Public Entity Maintenance: The City of Chula Vista may, at its discretion, approve a public or acceptable quasi-public entity (e.g., the County Flood Control District, or annex to an existing assessment district, an existing utility district, a state or federal resource agency, or a conservation conservancy) to assume responsibility for maintenance, repair and replacement of the BMPs. Unless

otherwise approved by the City, public entity maintenance agreements shall ensure estimated costs are front-funded or reliably guaranteed (e.g., through a trust fund, assessment district fees, bond, letter of credit or similar means). In addition, the City may seek protection from liability by appropriate releases and indemnities. Storm water BMPs within the City's jurisdiction proposed for transfer to any other public entity will be subject to approval by the City before installation. The project proponent must take all steps necessary to ensure that the City is involved in the negotiation of maintenance requirements within its jurisdiction with any other public entities accepting maintenance responsibilities; and in negotiations with the resource agencies responsible for issuing permits for the construction and/or maintenance of the facilities. The City must be identified as a third party beneficiary empowered to enforce any such maintenance agreement within its jurisdiction.

2. Project Proponent Agreement to Maintain Storm Water BMPs: The City may enter into a contract with the project proponent obliging the project proponent and successors to maintain, repair, and replace the storm water BMP as necessary into perpetuity. Security may be required.
3. Assessment Districts: The City may approve an Assessment District or other funding mechanism created by the project proponent to provide funds for storm water BMP maintenance, repair, and replacement on an ongoing basis. Any agreement with such a District shall be subject to the Public Entity Maintenance provisions above.
4. Lease Provisions: In those cases where the City of Chula Vista holds title to the land in question, and the land is being leased to another party for private or public use, the City may assure storm water BMP maintenance, repair, and replacement through conditions in the lease.
5. Conditional Use Permits: For discretionary projects only, the City may assure maintenance of storm water BMPs through the inclusion of maintenance conditions in the Conditional Use Permit. Security may be required.
6. Alternative Mechanisms: The City may in its discretion accept alternative maintenance mechanisms if such mechanisms are as protective as those listed above.

Verification Mechanisms

For discretionary projects, the City-approved method of storm water BMP maintenance shall be incorporated into the project's permit, and shall be consistent with permits issued by resource agencies, before decision-maker approval of discretionary permits. For projects requiring only ministerial permits, the City-approved method of storm water BMP maintenance shall be incorporated into the permit conditions before the issuance of any ministerial permits. In all instances, the project proponent shall provide proof of execution of a City-approved method of maintenance, repair, and replacement before the issuance of construction approvals. For public projects that are not required to obtain permits, a City-approved method of storm water BMP maintenance, repair, and replacement shall be established prior to the commencement of construction. For all properties, the verification mechanism will include the project proponent's signed

statement, as part of the project application, accepting responsibility for all structural BMP maintenance, repair and replacement, until a City-approved entity assumes responsibility for structural BMPs maintenance, repair, and replacement.

Maintenance Requirements

1. Inspection, Operation, and Maintenance Plan (IOMP): A copy of an Inspection, Operation, and Maintenance Plan (IOMP), prepared by the project proponent and as approved by the City, shall be included in the Water Quality Technical Report for the project, and submitted to the City prior to the issuance of a Grading, Construction, or Building Permit; or any other development permit required for the project. The IOMP shall describe the designated responsible party to manage the storm water BMPs, employees' training program and duties, inspection and operating schedule, maintenance frequency, routine service schedule, specific maintenance activities, copies of resource agency permits, and any other necessary activities. At a minimum, maintenance agreements shall require the inspection and servicing of all structural BMPs on an annual basis. The project proponent or City-approved maintenance entity shall complete and maintain IOMP forms to document all maintenance requirements. Parties responsible for the IOMP shall retain records for at least 5 years. These documents shall be made available to the City for inspection upon request at any time.
2. Maintenance Agreement and Access: As described in Section 8 of this Manual, the City will require a maintenance agreement to be signed for the inspection and maintenance of storm water facilities, providing City staff access to BMPs for inspection purposes. The agreement shall run with the land throughout the life of the project, until such time that the storm water BMPs requiring maintenance and access are replaced and maintenance and access are no longer needed, all to the satisfaction of the City of Chula Vista.

SECTION 4. WATER QUALITY TECHNICAL REPORT GUIDELINES PAGE

SECTION 4. WATER QUALITY TECHNICAL REPORT GUIDELINES

4.1 Purpose

A Water Quality Technical Report (WQTR), when required, shall:

1. Identify Pollutants and Conditions of Concern that may be generated from the proposed development during the post-construction phase of the project.

2. Propose adequate permanent Best Management Practices (BMPs) that will be incorporated in the project to effectively mitigate any negative impacts of the development to water quality, downstream erosion, and habitat integrity.

3. Provide for the long-term maintenance of all proposed permanent BMPs

A WQTR shall address all the requirements included in the City of Chula Vista Standard Urban Runoff Mitigation Plans (SUSMP), which is incorporated in Section 3 of this Manual. All structural permanent BMPs proposed in an approved WQTR shall be incorporated in the project design, constructed as approved, and maintained into perpetuity. Non-structural BMPs shall be implemented into perpetuity. Non-compliance with any of these requirements shall constitute a violation of the Chula Vista Municipal Code Chapter 14.20 and subject to enforcement as provided therein.

4.2 Minimum Requirements

The City of Chula Vista does not require specific formats or templates for WQTRs. The developer may select any suitable format, however at a minimum, specific information required in Section 4.3 shall be included in a WQTR and shown on construction plans as applicable. The WQTR shall be project specific and concise. Reference to information available in well-known and readily available resources such as the CASQA Handbooks or the Caltrans Manuals is preferred to attaching copies of multiple pages in the WQTR. It is not necessary to provide general information that is not relevant to the proposed project.

The WQTR submittal shall include a BMP Plan as described in Section 4.4 and shall accompany a hydrology report and/or a geotechnical/soils report, when required under Sections 4.5 and 4.6.

All proposed Low Impact Development Site Design and Treatment Control BMPs shall be clearly shown on the project's grading plans, construction plans, or other similar plans; and described in the project's specifications with adequate information and specificity to enable the contractor to construct the BMPs as envisaged in the project's WQTR.

4.3 Content and Organization

A WQTR shall include discussions of the following topics as they relate to the proposed project. Any preliminary or final WQTR submitted to the City of Chula Vista shall have the stamp and signature of a Registered Civil Engineer who has prepared or supervised the preparation of the WQTR.

4.3.1 General Information

1. Project location, description, physical features, total and land disturbance areas, and a narrative of project activities.
2. A vicinity map.
3. Surrounding land use and proposed project land use.
4. Soil erosion potential.
5. Site slope.
6. Watershed or watersheds containing the project site.
7. Existing natural drainages or habitat to be preserved.
8. Sensitivity of receiving water bodies.
9. Proximity to receiving water bodies.
10. Non-storm water discharges.

4.3.2 Pollutants and Conditions of Concern

Pollutants of Concern consider the impacts of potential discharges of pollutants from the project on the quality of Receiving Waters during the post-construction phase of the project. Conditions of Concern deal with the project's hydrologic impacts on downstream erosion and habitat integrity. Concepts within Interim Hydromodification Criteria and Hydromodification Management Plan (HMP) attempt to minimize hydrologic impacts of developments on downstream erosion and habitat integrity. The following information shall be included in a WQTR, as required in Section 3.6.1.b (Identify Pollutants of Concern) and Section 3.6.1.c (Identify Conditions of Concern).

1. Project map with watershed and surface water bodies within project area.

2. Beneficial uses of surface waters and ground water in and surrounding the project.

3. Pollutants expected to be generated by the project during its post-construction phase.

4. Pollutants of Concern within Receiving Waters downstream of the project site.

5. Impaired water bodies downstream of the project site and Pollutants of Concern within such impaired water bodies.

6. Pollutants of Concern to be addressed by structural or non-structural BMPs.

7. Downstream watercourses, creeks, natural channels, rivers, or any other natural water bodies potentially susceptible to erosion or habitat impact.

8. Changes in the site and watershed hydrology resulting from the project and their impact on downstream erosion and habitat impact. Details of topics to be addressed are included in Section 4.6.

4.3.3 Proposed BMPs

The WQTR shall address mitigation measures proposed to the Maximum Extent Practicable (MEP) to protect water quality and prevent increases in downstream erosion and habitat impact. The WQTR shall include all of the following:

1. Narrative analysis or description of site features and conditions that constrain, or provide opportunities for storm water control.

2. Narrative description of site design characteristics that protect natural resources.

3. Narrative description and/or tabulation of site design characteristics, building features, and pavement selections that reduce imperviousness of the site.

4. Tabulation of proposed pervious and impervious areas, showing self-treating areas, self-retaining areas, and areas tributary to each treatment or flow-control facility.

5. Preliminary designs, including calculations, for each infiltration, treatment, or flow-control facility. Elevations should show sufficient hydraulic head for each.

6. Low Impact Development Site Design BMPs - This section shall include discussions of applicable proposed Low Impact Development Site Design BMPs, as required in Section 3.6.2.a. Low Impact Development Site Design BMPs and their construction details shall be shown on the project's construction plans.

7. Source Control BMPs - This section shall include a table of identified pollutant sources and for each source, the Source Control BMPs used to reduce pollutants to the Maximum Extent Practicable. Discussions of applicable proposed Source Control BMPs, as required in Section 3.6.2.b shall also be included.

8. Treatment Control BMPs - This section shall include discussions of applicable proposed Treatment Control BMPs as required in Section 3.6.2.c. Information provided in this section shall include:

    - Types of Treatment Control BMPs selected for the project.

- Basis for selection of the proposed Treatment Control BMPs.

- Justification for not proposing higher efficiency Treatment Control BMPs from Table 3.3.

- When proposing centralized infiltration Treatment Control BMPs, a discussion shall be provided regarding restrictions on the use of centralized infiltration Treatment Control BMPs.

- Hydrology calculations to determine treatment flow rate or volume.

- Design and numeric sizing criteria and calculations.

- For proprietary Treatment Control BMPs, include information such as size, model, expected treatment capacity, and other specifications for each of the proposed BMPs. Include vendor specifications and third party testing and certification, when available.

- For non-proprietary Treatment Control BMPs, include information such as BMP type, special features, general dimensions, treatment capacity, and general construction components.

Treatment Control BMPs and their construction details shall be shown on the project's construction plans.

9. Hydromodification Control BMPs - This section shall include discussions of applicable proposed Hydromodification Control BMPs as required in Section 3.6.2.d. Information provided in this section shall include:

   - Types of Hydromodification Control BMPs selected for the project.

   - Basis for selection of the proposed Hydromodification Control BMPs.

   - Hydrology calculations to demonstrate compliance with the requirements of the Interim Hydromodification Criteria or the Hydromodification Management Plan, as applicable and as discussed in Section 4.6.

   - Design and construction details of proposed Hydromodification Control BMPs, such as type, special features, general dimensions, capacity, and general construction components.

   Hydromodification Control BMPs and their construction details shall be shown on the project's construction plans.

4.3.4 Maintenance

This section shall include:

1. A discussion of general maintenance requirements for infiltration, treatment, and flow-control facilities.

2. The Responsible Party who will implement and maintain the BMPs into perpetuity. Responsible Party in this context means the property owner or any other person, corporation, or legal entity accepting, in writing and in City approved form, responsibility on behalf of the property owner.

3. An Inspection, Operation and Maintenance Plan (IOMP) and schedule as described in detail in Section 8 of this Manual.
4. An estimate of annual maintenance costs for structural and non-structural BMPs, and a discussion of means by which facility maintenance will be financed and implemented.

5. A statement accepting responsibility for interim operation and maintenance of facilities.

6. Identification of any conflicts with codes or requirements or other anticipated obstacles to implementing the proposed facilities.

7. In the final WQTR, include an executed copy of the "Storm Water Management Facilities Maintenance Agreement with Grant of Access and Covenants". A template for this Agreement is included at the end of Section 8 of this Manual.

8. Any other agreements, easements, licenses or permits relating to proposed BMP construction, location, maintenance, or changes in drainage character.

4.4 BMP Plan

The BMP Plan shall be of a suitable scale (preferably 24"x36") to clearly show all relevant site details required below. The entire property shall be included on one sheet (use key map if multi-sheets). The following information shall be included on the BMP Plan:

- Project boundaries.

- Locations of existing and proposed buildings, streets, driveways, parking areas, and other impervious areas.

- Locations of activity areas where pollutants may be generated or come into contact with storm water, such as outdoor materials storage areas, trash enclosures, loading docks, vehicle washing areas, fueling islands, wash racks, hazardous materials storage areas, etc.

- Locations of landscaped areas.

- Existing natural hydrologic features (depressions, watercourses, floodplains, relatively undisturbed areas) and significant natural resources.
- Soil types and depth to groundwater.

- Areas of potential soil erosion.

- Environmentally Sensitive Areas adjacent or within 200 feet of the project boundary.

- Locations of natural drainage or sensitive areas to be preserved.

- Locations of existing and proposed storm drainage systems, such as storm drain pipes, inlets, ditches, roof drains, etc.

- Delineation of Drainage Management Areas and directions of flow. Each Drainage Management Area shall be clearly identified as one of the following types:

  a. Self-treating areas.
  b. Self-retaining areas (also called “zero-discharge” areas).
  c. Areas that drain to self-retaining areas.
  d. Areas that drain to Integrated Management Practices.

  For each drainage area, types of impervious area proposed (roof, plaza/sidewalk, and street/parking) and area of each.

- Proposed design features and surface treatments used to minimize imperviousness.

- Locations of existing and proposed structural storm water controls, including LID Site Design features, Source Control BMPs, Treatment Control BMPs, and Hydromodification Control BMPs.

- General plans, sections, details, and specifications for proposed LID Site Design, Treatment Control, and Hydromodification Control BMPs.

4.5 Geotechnical/Soils Studies

A geotechnical/soils report is required for each Priority Development Project that addresses the following topics:

- Soil erosion potential before and after grading, and recommendations for minimizing erosion.
- Potential for infiltration BMPs in view of soil permeability, depth to water table, and other geotechnical consideration.
- Recommendations to enable the project to use LID Site Design BMPs, infiltration Treatment Control BMPs, or Hydromodification Control BMPs. Such recommendations may include deepening foundations, the use of impervious layers near foundations, installing under-drains, etc.
- Potential for temporary or permanent groundwater extraction, and if coverage under NPDES Permit No CAG919001, R9-2007-0034, or any other re-issuances of those permits, or any other regulatory permit for discharges of groundwater to Receiving Waters is required.

A summary of findings and recommendations from the geotechnical/soils report shall be included in the project's WQTR.

4.6 Hydrology Studies

The following topics shall be addressed in the WQTR for all new development and redevelopment projects:

- Characterization of project hydrology and runoff both pre-project and post-project, locations of storm water outfalls, tributary drainage areas to outfalls, changes in downstream erosion potential, and site hydrology.
- Impacts of the project on hydrologic regime of downstream Receiving Waters and habitat integrity, such as discussed in Section 3.6.1.c. Identification of Conditions of Concern.
- Hydrology calculations to demonstrate compliance with the Interim Hydromodification Criteria (IHC) or Hydromodification Management Plan (HMP) requirements included in Section 3 of this Manual, as applicable. Alternatively, this information can be provided in a separate hydrology study report, in which case a summary of results and conclusions shall be provided in the WQTR.

Should the project be exempt from IHC or HMP, a discussion shall be provided to demonstrate compliance with the requirements of Section 3.6.1.c, including a table comparing pre- and post-development peak discharge flow rates, volumes, and durations for the two- and ten-year frequency, Type I storm, of six-hour or 24-hour duration (whichever is the closer approximation of the site's time of concentration) storms. A discussion shall also be included to identify potential increased downstream erosion and habitat impact resulting from the development, and proposed mitigation measures.

Alternatively, the above topics may be presented in a hydrology study report, in which case, a summary of results and conclusions shall be provided in the WQTR.

SECTION 5. BEST MANAGEMENT PRACTICES DESIGN CRITERIA

SECTION 5. BEST MANAGEMENT PRACTICES DESIGN CRITERIA

The following documents provide design standards, criteria, guidelines, and procedures for developing Best Management Practices on new development and redevelopment projects. In general, such standards and criteria meet City of Chula Vista's storm water requirements, however, the City reserves the right to make the final determination as to the applicability of each of the BMPs, standards, criteria, etc. to a development or redevelopment project on a case-by-case basis. For further information on specific requirements, please review the contents of this Development Storm Water Manual or consult with City staff.

1. **Countywide Model SUSMP – Standard Urban Storm Water Mitigation Plan for Development Application, January 2, 2009**

   http://www.projectcleanwater.org/pdf/susmp/final_updated_model_susmp_2009.pdf

2. **California Stormwater Quality Association (CASQA) Stormwater Best Management Practices Handbooks**

   http://www.cabmphandbooks.com

3. **County of San Diego Low Impact Development Handbook**

   http://www.sdcounty.ca.gov/dplu/LID-Handbook.pdf

4. **County of San Diego Low Impact Development Handbook Fact Sheets**

   http://www.co.san-diego.ca.us/dplu/docs/LID-Appendices.pdf

5. **Caltrans Construction Site BMP Manual**

   http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm

6. **Caltrans Treatment BMP Technology Report**

   http://www.dot.ca.gov/hq/env/stormwater/annual_report/2008/annual_report_06-07/attachments/Treatment_BMP_Technology_Rprt.pdf

7. **City of San Diego Water Department Source Water Protection Guidelines for New Development**

   http://www.sandiego.gov/water/operations/environment/swpg.shtml

SECTION 6. STANDARD PERMANENT BEST MANAGEMENT PRACTICES PAGE

List of Figures

SECTION 6. STANDARD PERMANENT STORM WATER BMPs REQUIREMENTS

Development projects subject to standard permanent Best Management Practices (BMPs) identified by completing forms 5500 and 5501 of this Manual shall incorporate all necessary permanent BMPs into the project plans prior to submittal, regardless of project type. The City may approve proposed alternatives to the BMP requirements in this Manual if they are determined by the City to be applicable and equally effective. Also, additional BMPs, analysis, or information may be required by the City to enable staff to determine the adequacy of proposed BMPs, which will be requested through the project review process. Refer to Section 2.1.1: Permanent Storm Water BMP Requirements and Section 2.2: Prepare and Submit Appropriate Plans for guidance in the BMP design process.

6.1. Minimize Project's Impervious Footprint and Conserve Natural Areas

The following site design options shall be considered, incorporated, and implemented where determined applicable and feasible by the developer, and as approved by the City of Chula Vista, during the site planning and approval process, consistent with applicable General Plan policies and other development regulations.

a. Minimize impervious footprint. This can be achieved in various ways, including but not limited to, increasing building density (number of stories above or below ground) and developing land use regulations seeking to limit impervious surfaces. Decreasing the project's footprint can substantially reduce the project's impact to water quality and hydrologic conditions.

b. Conserve natural areas where feasible. This can be achieved by concentrating or clustering development on the least environmentally sensitive portions of a site, while leaving the remaining land in a natural, undisturbed condition. The following list provides guidelines for determining the least sensitive portions of the site, in order of increasing sensitivity. Developers should also refer to the City's Multiple Species Conservation Plan or other biological regulations, as appropriate.

   - Areas devoid of vegetation, including previously graded areas and agricultural fields.
   - Areas of non-native vegetation, disturbed habitats and eucalyptus woodlands.
   - Areas of chamise or mixed chaparral, and non-native grasslands.
   - Areas containing coastal scrub communities.
   - All other upland communities.
   - Occupied habitat of sensitive species and all wetlands (as both are defined by the City of Chula Vista).
   - All areas necessary to maintain the viability of wildlife corridors.

Within each of the above categories, areas containing hillsides (as defined in Section 9) should be considered more sensitive than the same category without hillsides.

c. Construct walkways, trails, patios, overflow parking lots, alleys, and other low-traffic areas with permeable surfaces, such as pervious concrete, porous asphalt, unit pavers, and granular materials.

d. Construct streets, sidewalks and parking lot aisles to the minimum acceptable widths, provided that public safety and a walkable environment for pedestrians are not compromised.

e. Maximize canopy interception and water conservation by preserving existing native trees and shrubs, and planting additional native or drought tolerant trees and large shrubs.

f. Minimize the use of impervious surfaces, such as decorative concrete, in the landscape design.

g. Use natural drainage systems to the maximum extent practicable.

h. Other site design options, which are comparable and equally effective, as approved by the City.

6.2 Minimize Directly Connected Impervious Areas (DCIAs)

Projects shall consider, incorporate, and implement the following design features, where determined applicable and feasible by the City.

a. Where landscaping is proposed, drain rooftops into adjacent landscaping prior to discharging to storm drainage systems.
b. Where landscaping is proposed, drain impervious sidewalks, walkways, trails, and patios into adjacent landscaping.
c. Other design characteristics, which are comparable and equally effective, as approved by the City.

6.3 Protect Slopes and Channels

Project plans shall include storm water BMPs to decrease the potential for erosion of slopes and/or channels, consistent with local codes and ordinances, and where applicable, with the approval of agencies with jurisdiction over the project, e.g., the U.S. Army Corps of Engineers, the San Diego Regional Water Quality Control Board, and/or the California Department of Fish and Game. The following design principles shall be considered, and incorporated and implemented where determined applicable and feasible by the City:

a. Convey runoff safely from the tops of slopes.
b. Vegetate slopes with deep-rooted native or drought tolerant vegetation.
c. Control and treat flows in landscaping and/or other controls prior to reaching existing natural drainage systems.
d. Stabilize permanent channel crossings.
e. Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion. Energy dissipaters shall be installed in such a way as to minimize impacts to receiving waters.
f. Other design principles, which are comparable and equally effective, as approved by the City.

6.4 Provide Storm Drain System Signage

Storm drain signages are highly visible source control messages, typically placed directly adjacent to storm drain inlets. The signages contain a brief statement that prohibits the dumping of improper materials into the storm drainage system. Graphical icons, either illustrating anti-dumping symbols or images of receiving water fauna, are effective supplements to the anti-dumping message. Projects shall include the following requirements in the project design.

a. Provide stenciling, labeling, stamping in fresh concrete, or other appropriate forms of signage near all storm drain inlets and catch basins within the project area with prohibitive language (such as: “NO DUMPING – I LIVE DOWNSTREAM”) and graphical icons to discourage illegal dumping.
b. Post signs and prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area, according to City approved design.
c. Maintain legibility of stencils and signs.
d. Signage for storm drain inlets within the public right of way shall comply with the specifications included in Chula Vista Design Standard # CVCS-24 (copy attached).

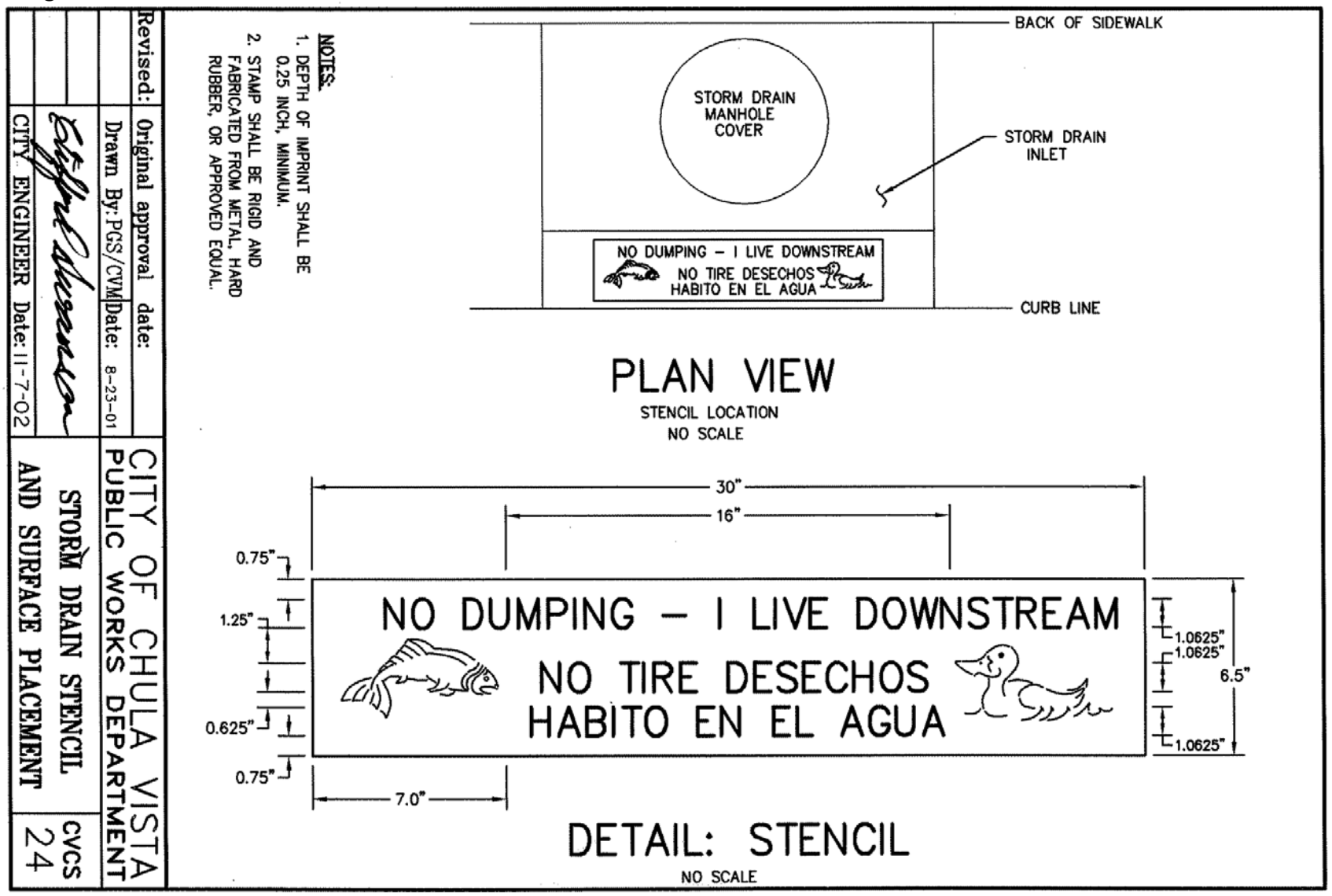
6.5 Design Outdoor Material Storage Areas to Reduce Pollution Introduction

Improper storage of materials outdoors may increase the potential for toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to enter storm drainage systems. Where the project plans include outdoor areas for storage of hazardous materials that may contribute pollutants to storm drainage systems, the following storm water BMPs are required:

a. Hazardous materials with the potential to contaminate urban runoff shall either be: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to storm drainage systems; or (2) protected by cover and secondary containment structures such as berms, dikes, or curbs.

b. The storage area shall be paved and sufficiently impervious to contain leaks and spills, and graded to prevent run-on and run-off.
c. The storage area shall have a roof or awning to minimize direct precipitation within the secondary containment area.
d. Other methods, which are comparable and equally effective within the project, where determined applicable and feasible by the City.

Figure 6.1 Storm Drain Stencil and Surface Placement



6.6 Design Trash Storage Areas to Reduce Pollution Introduction

All trash container areas shall meet the following requirements in compliance with Chula Vista Municipal Code Section 19.58.340, with limited exclusion of detached residential homes:

a. Paved with an impervious surface, designed not to allow run-on from adjoining areas and screened or walled to prevent off-site transport of trash.
b. Provide roof or awning to minimize direct precipitation and prevent run-off.
c. Other methods, which are comparable and equally effective within the project, where determined applicable and feasible by the City.

6.7 Use Efficient Irrigation Systems, Landscape Design, and Employ Integrated Pest Management Principles

1. Use Efficient Irrigation Systems

Development projects shall design the timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm drainage system. The following methods to reduce excessive irrigation runoff shall be considered, incorporated, and implemented where determined applicable and feasible by the City:

a. Employing rain shutoff devices to prevent irrigation during or after precipitation.
b. Designing irrigation systems to each landscape area's specific water requirements.
c. Using flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
d. Employing other comparable, equally effective, methods to reduce irrigation water runoff.

2. Employ Integrated Pest Management Principles

Integrated Pest Management (IPM) is an ecosystem-based pollution prevention strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant plant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment. More information may be obtained at the UC Davis website:

(http://www.ipm.ucdavis.edu/WATER/U/index.html).

a. Eliminate and/or reduce the need for pesticide use in the project design by:

   - Planting pest-resistant or well-adapted plant varieties, such as native plants.
   - Discouraging pests by modifying the site and landscaping design. Pollution prevention is the primary "first line of defense" because pollutants that are never used do not have to be controlled or treated (methods which are inherently less efficient).

b. Distribute IPM educational materials to future site residents/tenants. At a minimum, educational materials must address the following topics:

   - Keeping pests out of buildings and landscaping using barriers, screens, and caulking.
   - Physical pest elimination techniques, such as weeding, squashing, trapping, washing, or pruning out pests.
   - Relying on natural enemies to eat pests.
   - Proper use of pesticides as a last line of defense.

6.8 Private Roads

The design of private roadway drainage shall use at least one of the following:

a. Rural swale system: Direct street sheet flows to vegetated swales or gravel shoulders.
b. Urban curb/swale system (street slopes to curb): Install periodic curb cuts and swale inlets that drain to vegetated swales/biofilters.
c. Dual drainage system: First flush captured in street catch basins and discharged to adjacent vegetated swale or gravel shoulder, high flows connect directly to storm drainage system.
d. Other methods, which are comparable and equally effective within the project, as approved by the City.

6.9 Residential Driveways & Guest Parking

The design of driveways and private residential parking areas shall use one at least of the following features:

a. Design driveways with shared access among multiple properties, flares (single lane at street), or wheel strips (paving only under tires); or, drain into landscaping prior to discharging to storm drainage systems;
b. Uncovered temporary or guest parking on private residential lots may be: paved with a permeable surface; or, designed to drain into landscaping prior to discharging to storm drainage systems.
c. Other features which are comparable and equally effective, as approved by the City.

6.10 Dock Areas

Loading/unloading dock areas shall include the following:

a. Cover loading dock areas, or design drainage to preclude run-on and runoff.
b. Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.
c. Other features which are comparable and equally effective, as approved by the City.

6.11 Maintenance Bays

Maintenance bays shall include the following:

a. Repair/maintenance bays shall be located indoors; or, designed to preclude run-on and runoff.
b. Design a repair/maintenance bay drainage system to capture all wash water, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of repair/maintenance bays to storm drainage systems is prohibited. If required by the City, obtain an Industrial Waste Discharge Permit for discharging to sanitary sewer systems.
c. Other features which are comparable and equally effective, as approved by the City.

6.12 Vehicle Wash Areas

Projects that include areas for washing/steam-cleaning of vehicles shall use the following:

a. Self-contained; or covered with a roof or overhang.
b. Equipped with a clarifier or other pretreatment facility.
c. Properly connected to a sanitary sewer, as approved by the City.
d. Other features which are comparable and equally effective, as approved by the City.

6.13 Outdoor Processing Areas

Outdoor process equipment operations, such as rock grinding or crushing, painting or coating, grinding or sanding, degreasing or parts cleaning, landfills, waste piles, and wastewater and solid waste treatment and disposal, and other operations determined to be a potential threat to water quality by the City of Chula Vista shall adhere to the following requirements.

a. Cover or enclose areas that would be the most significant source of pollutants; slope the area toward a dead-end sump; or, discharge to the sanitary sewer

system following appropriate pre-treatment in accordance with conditions established by the applicable sewer agency.
b. Grade or berm area to prevent run-on from surrounding areas.
c. Installation of storm drains in areas of equipment repair is prohibited.
d. Other features which are comparable or equally effective, as approved by the City.

6.14 Equipment Wash Areas

Outdoor equipment/accessory washing and steam-cleaning activities shall meet the following requirements:

a. Be self-contained or covered with a roof or overhang.
b. Be equipped with a clarifier, grease trap, or other pretreatment facility, as appropriate.
c. Be properly connected to a sanitary sewer after first obtaining a permit from the applicable sewer agency.
d. Other features which are comparable or equally effective, as approved by the City.

6.15 Parking Areas

To minimize the offsite transport of pollutants from parking areas, the following design concepts shall be considered, incorporated, and implemented where determined applicable and feasible by the City:

a. Where landscaping is proposed in parking areas, incorporate landscape areas into the drainage design.
b. Outdoor parking areas shall be constructed with permeable paving, where feasible and practical. Permeable paving should be strongly considered for overflow parking (parking stalls provided in excess of the City's minimum parking requirements).
c. Other design concepts, which are comparable and equally effective, as approved by the City.

6.16 Fueling Area

Fuel dispensing areas shall contain the following:

a. Overhanging roof structure or canopy. The cover's minimum dimensions must be equal to or greater than the area within the grade break. The cover must not drain onto the fuel dispensing area and the downspouts must be routed to prevent drainage across the fueling area. The fueling area shall drain to the project's treatment control BMP(s) prior to discharging to the storm drainage system.

b. Paved with Portland cement concrete (or equivalent smooth impervious surface). The use of asphalt concrete shall be prohibited.
c. Have an appropriate slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of urban runoff.
d. At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.
e. Other features which are comparable or equally effective, as approved by the City.

6.17 Hillside Landscaping

a. Hillside areas disturbed by project development shall be landscaped with deep-rooted, drought tolerant plant species selected for erosion control, satisfactory to the City.
b. Other features which are comparable or equally effective, as approved by the City.

6.18 Design of Drainage Systems for Industrial/Commercial Facilities

As required by the City and in its sole discretion, Industrial/Commercial facilities with paved outdoor areas shall avoid sheet flow of runoff to the street gutter. Instead, all outdoor paved areas shall be directed to one or more vegetated swales or storm drain sump(s) or catch basin(s) before discharging to the public street gutter and/or public storm drainage systems. The sump(s) catch basin(s) shall be equipped with Treatment Control BMPs, satisfactory to the City. Also, all private storm drainage facilities proposed shall be maintained by the property owner or approved private entity. The ongoing storm drainage systems maintenance records shall be kept on site indicating at the minimum, type of system, operator name, inspection/maintenance dates, and maintenance activity type.

The City enforces maintenance of the proposed storm water facilities in accordance with applicable City of Chula Vista ordinances, policies, and regulations.

6.19 Pet Waste Stations

Where applicable and feasible, pet waste stations shall be installed at locations on the project where pet owners can easily obtain bags and dispose of their pet waste in receptacles provided for this purpose. Stations shall include signage that encourages pet owners to pick up after their pets in accordance with Chula Vista Municipal Code Section 6.24.050.

SECTION 7. CONSTRUCTION STORM WATER PERFORMANCE STANDARDS **PAGE**

SECTION 7. CONSTRUCTION STORM WATER PERFORMANCE STANDARDS

Those projects that have been determined to require construction Best Management Practices (BMPs) in Sections 2.1 and 2.2 of this Manual must identify construction BMPs to be implemented in accordance with performance standards discussed in this section. Construction BMPs must be identified either in: 1) a Storm Water Pollution Prevention Plan (SWPPP), if the proposed land disturbance is one acre or more; OR, 2) a Construction Storm Water Management Plan (CSWMP), if the proposed land disturbance is less than one acre. A SWPPP shall be prepared in accordance with the requirements of the National Pollutant Discharge Elimination System (NPDES) General Construction Permit, State Water Resources Control Board Order No. 2009-0009-DWQ. A CSWMP shall be prepared in accordance with guidelines in Section 2 (Forms 5504A or 5504B, as applicable).

Projects that disturb one acre or more of land are additionally required to submit a Notice of Intent to the San Diego Regional Water Quality Control Board for coverage under the General Construction Permit, Order No. 2009-0009-DWQ, obtain a Waste Discharge Identification Number (WDID), and comply with all requirements of said Order. Should there arise a conflict between the requirements of the General Construction Permit and this Manual, the more stringent requirement shall apply.

It is the responsibility of the property owner and/or contractor to select, install and maintain appropriate BMPs. Examples of construction BMPs are provided for reference in Section 7.6. BMPs must be installed in accordance with the requirements of the State General Construction Permit or an industry recommended standard. More information about BMPs is provided in references cited in Section 5 of this Manual.

While implementation of BMPs on construction sites is required all year round, BMP requirements differ between the wet season (October 1st – April 30th) and the dry season (May 1st – September 30th), project type, and site topography, as described below.

7.1 Site Management Requirements

Construction is a dynamic operation where changes are expected. Storm water BMPs for construction sites are usually temporary measures that require frequent maintenance to ensure their effectiveness and may require relocation, revision and reinstallation, particularly as project grading progresses. Therefore, owner/contractor self-inspections are required. They shall be performed by the owner's/contractor's qualified contact person specifically trained in storm water pollution prevention site management and storm water BMPs, including the installation and maintenance of sediment and erosion control measures. Additional qualified persons may assist with the inspection activities under the direction of the qualified contact person. A qualified contact person is required for all sites during both wet and dry weather conditions.

There are four primary purposes for self-inspections conducted by owners and contractors:

- To ensure that owners/contractors take full responsibility for managing storm water pollution caused by their activities.
- To ensure that storm water BMPs are properly documented and implemented and are functioning effectively.
- To identify maintenance (e.g., sediment removal) and repair needs.
- To ensure that project proponents implement their storm water management plans.

Self-inspection reports, which include such information as date, time, weather conditions, BMP status, discharge observations, etc., must be kept on-site and made available for City or other agency inspection, if requested. A qualified contact person shall perform self-inspections according to the following schedule:

- Check weather forecast daily.
- Conduct daily self-inspections in the wet season.
- Conduct weekly (every 7 days) self-inspections in the dry season.
- Conduct self-inspections before and after each predicted storm event.
- Prepare self-inspection reports for each inspection.

Storm water pollution prevention site management requirements include:

a. A qualified person who is trained and competent in the use of BMPs shall be on site daily, although not necessarily full time, to evaluate the conditions of the site with respect to storm water pollution prevention. This qualified contact person shall represent the contractor/owner on storm water issues.

b. The qualified person shall implement the conditions of the SWPPP/ CSWMP, contract documents, and/or local ordinances with respect to erosion and sediment control and other waste discharge regulations.

c. The qualified person is responsible for monitoring the weather and implementing any emergency plans, as needed. The weather shall be monitored on a 5-day forecast plan and a full BMP protection plan shall be activated when there is a predicted 40% or greater chance of rain. Standby erosion control BMPs shall be deployed at least 24 hours before the start of a predicted storm event.

d. The qualified person is responsible for overseeing any site grading and operations and evaluating the effectiveness of the BMPs. This person shall modify the BMPs as necessary to keep the dynamics of the site in compliance. This person or other qualified persons are responsible for checking the BMPs routinely for maintenance and documenting the BMPs being implemented.

7.2 Performance Standards

The City of Chula Vista will evaluate the adequacy of the owner's/contractor's site management for storm water pollution prevention, inclusive of BMP implementation on construction sites based on performance standards for storm water BMPs. Ineffective BMPs shall be replaced with more effective BMPs. Performance standards shall include:

a. Minimize increases in pollution (including sediment) in runoff from the site to the Maximum Extent Practicable (MEP).
b. Minimize slope erosion to the MEP.
c. Minimize increases in water velocity moving offsite to the MEP.
d. Meet effluent standards included in the General Construction Permit for those projects that disturb one acre or more of land.

A site will be considered inactive if construction activities have ceased for a period of 7 or more consecutive calendar days. At any time of year, an inactive site must be fully protected from erosion and discharges of sediment. It is also the owner's/contractor's responsibility at both active and inactive sites to implement a plan to address all potential non-storm water discharges.

Regardless of any inspections conducted by the City, property owners or contractors are required to prevent any construction-related materials, wastes, spills or residues from entering storm drainage systems.

7.3 Seasonal Requirements

7.3.1 Dry Season Requirements (May 1 through September 30)

Dry Season requirements include but are not limited to:

a. Perimeter protection BMPs must be installed and maintained to comply with Section 7.2: Performance Standards.

b. Sediment control BMPs must be installed and maintained to comply with Section 7.2: Performance Standards.

c. BMPs to control sediment tracking must be installed and maintained at entrances/exits to comply with Section 7.2: Performance Standards.

d. Material needed to install standby erosion control BMPs necessary to completely protect the exposed portions of the site from erosion, and to prevent sediment discharges, must be stored on site. Areas that have already been protected from erosion using physical stabilization or

established vegetation stabilization BMPs as described below are not considered “exposed” for purposes of this requirement.

e. The owner/contractor must have the ability to deploy standby erosion control BMPs as needed to completely protect the exposed portions of the site within 24 hours of a predicted storm event (a predicted storm event is defined as a forecasted 40% chance of rain). Upon request, the owner/contractor must provide proof of this capability that is acceptable to the City.

f. Deployment of physical or vegetation erosion control BMPs must commence as soon as grading and/or excavation is completed for any portion of the site. The project proponent may not continue to rely on the ability to deploy standby erosion control BMP materials to prevent erosion of graded areas that have been completed.

g. Adequate number of washout areas shall be designated and maintained for materials, such as, concrete, stucco, paint, caulking, sealants, drywall plaster, etc.

h. Properly protected, designated storage areas are required for materials and wastes.

i. Remnant trash and debris shall be removed and/or properly stored/disposed of daily.

j. Storage, service, cleaning and maintenance areas for vehicles and equipment shall be identified and protected accordingly.

k. Materials for spill control/containment must be stockpiled on site.

l. Non-storm water discharges must be eliminated or controlled to the Maximum Extent Practicable.

7.3.2 Wet Season Requirements (October 1 through April 30)

Wet season requirements include but are not limited to:

a. Perimeter protection BMPs must be installed and maintained to comply with Section 7.2: Performance Standards.

b. Sediment control BMPs must be installed and maintained to comply with Section 7.2: Performance Standards.

c. BMPs to control sediment tracking must be installed and maintained at site entrances/exits to comply with performance standards Section 7.2: Performance Standards.

d. Material needed to install standby erosion control BMPs necessary to completely protect the exposed portions of the site from erosion, and to prevent sediment discharges, must be stored on site. Areas that have already been protected from erosion using physical stabilization or established vegetation stabilization BMPs as described below are not considered “exposed” for purposes of this requirement.

e. The owner/contractor must have the ability to deploy standby BMPs as needed to completely protect the exposed portions of the site within 24 hours of a predicted storm event (a predicted storm event is defined as a forecasted 40% chance of rain). Upon request, the owner/contractor must provide proof of this capability that is acceptable to the City.

f. Deployment of physical or vegetation erosion control BMPs must commence as soon as grading and/or excavation is completed for any portion of the site. The owner/contractor may not continue to rely on the ability to deploy standby BMP materials to prevent erosion of graded areas that have been completed.

g. Adequate number of washout areas shall be designated and maintained for materials such as concrete, stucco, paint, caulking, sealants, drywall plaster, etc.

h. Properly protected, designated storage areas are required for materials and wastes.

i. Remnant trash and debris shall be removed and/or properly stored/disposed of daily.

j. Storage, service, cleaning and maintenance areas for vehicles and equipment shall be identified and protected accordingly.

k. Materials for spill control/containment must be stockpiled on site.

l. Non-storm water discharges must be eliminated or controlled to the Maximum Extent Practicable.

m. Erosion control BMPs must be upgraded, if necessary, to provide sufficient protection for storms likely to occur during the wet season.

n. Perimeter protection and sediment control BMPs must be upgraded, if necessary, to provide sufficient protection for storms likely to occur during the wet season.

o. Adequate physical or vegetation erosion control BMPs must be installed and established for all graded areas prior to the start of the wet season. These

BMPs must be maintained throughout the wet season. If a selected BMP fails, it must be repaired and improved or be replaced with an acceptable alternate as soon as it is safe to do so. The failure of a BMP demonstrates that the BMP, as installed, was not adequate for the circumstances in which it was used, and shall be corrected or modified as necessary. Repairs or replacements must, therefore, put a more effective BMP in place.

p. All vegetation erosion control must be established prior to the wet season to be considered BMPs.

q. A disturbed area that is not completed, but is not being actively graded, must be fully protected from erosion if left for 7 or more calendar days. The ability to deploy standby erosion control BMP materials is not sufficient for these areas. BMPs must actually be deployed.

7.4 Limitation of Grading

The area that can be cleared or graded and left exposed at one time is limited to the amount of acreage that the owner/contractor can adequately protect prior to a predicted rainstorm. At no time shall disturbed soil area of the project site be more than 100 acres for an individual grading permit or a combination of grading permits under associated Tentative Map (i.e. TM XXX-1 through 3). The Director of Public Works may approve, on a case-by-case basis, expansions of the disturbed soil area limit. Soil stabilization and sediment control materials shall be maintained on site sufficient to protect the disturbed soil areas.

Under this requirement, grading shall be phased at larger sites. For example, it may be necessary to deploy erosion and sediment control BMPs in areas that are not completed but are not actively being worked before additional grading is done.

7.5 Advanced Treatment

Construction sites that pose an Exceptional Threat to Water Quality from sediment shall implement Advanced Treatment to eliminate or minimize the discharge of sediment from the construction site to storm drainage systems and/or receiving waters.

a. For purposes of this section, Exceptional Threat to Water Quality shall be defined as a site that meets all of the following criteria:

   i. All or part of the site is within 200 feet of waters named on the CWA Section 303(d) list of Water Quality Limited Segments as impaired for sedimentation and/or turbidity;
   ii. The disturbance area is greater than five acres, including all phases of the development;

iii. The disturbed slopes are steeper than 4:1 (horizontal: vertical) with at least 10 feet of relief, and drain toward the 303(d) listed receiving water for sedimentation and/or turbidity;

iv. The site contains a predominance of soils with USDA-NRCS Erosion factors k_f greater than or equal to 0.4. K_f is an NRCS soil erosion factor and the table for soils and their erosion factors in the San Diego region is readily accessible from the NRCS's web soil survey page or field office. The range of k_f in San Diego is 0.15 to 0.55. Michigan NRCS reports, "Soil erodibility factor K represents both susceptibility of soil to erosion and the rate of runoff, as measured under the standard unit plot condition. Soils high in clay have low K values, about 0.05 to 0.15, because they are resistant to detachment. Coarse textured soils, such as sandy soils, have low K values, about 0.05 to 0.2, because of low runoff even though these soils are easily detached. Medium textured soils, such as the silt loam soils, have moderate K values, about 0.25 to 0.4, because they are moderately susceptible to detachment and they produce moderate runoff. Soils having a high silt content are most erodible of all soils. They are easily detached; tend to crust and produce high rates of runoff. Values of K for these soils tend to be greater than 0.4".

b. Advanced treatment may be required on sites that do not meet all four of the criteria for Exceptional Threat to Water Quality listed above at the discretion of the City based on a record of non-compliance.

c. Alternatively, applicants may perform a MUSLE, RUSLE2, or similar analysis to prove to the City's satisfaction that Advanced Treatment is not required.

d. Treatment effluent water quality shall meet or exceed the water quality objectives for sediment, turbidity, pH, and toxicity as listed in the Water Quality Control Plan for the San Diego Basin (9) for inland surface waters, lagoons, and estuaries for the appropriate hydrologic unit.

e. Prior to obtaining a permit for proposed work, the applicant shall provide the following to the City:

i. A description of the work to be covered by permit for which the application is made;

ii. A description of the land on which the proposed work is to be done by legal description, street address or similar description that will readily identify and definitely locate proposed project site and area of proposed land disturbance;

iii. A plan of proposed work supported by necessary calculations, drawings, and supporting data prepared by a California Registered Design professional as required by the City;

iv. An operations and maintenance schedule for all proposed work acceptable to the City deemed necessary to achieve project water quality goals;

v. A monitoring plan for all required BMPs and water quality for all proposed work acceptable to the City deemed necessary to achieve project water quality goals;

vi. A written training plan for certification and documentation of necessary training and refreshers of staff to the satisfaction of the City.

f. Compliance with the above requirements does not provide a waiver from compliance with Active Treatment Systems (ATS) requirements of the General Construction Permit, Order No. 2009-0009-DWQ.

7.6 Example Construction Best Management Practices

7.6.1 Erosion Control

Physical stabilization BMPs, vegetation stabilization BMPs, or both, will be required to prevent erosion and sediment runoff from exposed graded areas. BMPs for physical and vegetation stabilization include:

a. Physical Stabilization

- Geotextiles
- Mats
- Fiber rolls
- Sprayed on binders
- Mulch on flat areas
- Other material approved by the City for use in specific circumstances

If physical stabilization is selected, materials must be appropriate to the circumstances in which they are deployed, and sufficient material must be deployed.

b. Vegetation Stabilization

- Preservation of existing vegetation
- Established interim vegetation (via hydroseed, seeded mats, etc.)
- Established permanent landscaping

If vegetation stabilization is selected, the stabilizing vegetation must be installed, irrigated and established (uniform vegetative coverage with 70% coverage established) prior to October 1st. In the event stabilizing vegetation has not been established by October 1st, other forms of physical stabilization must be employed to prevent erosion until the stabilizing vegetation is established.

7.6.2 Sediment Control

a. Perimeter protection

Protect the perimeter of the site or exposed areas from sediment ingress/discharge in sheet flows using:

- Silt fencing
- Gravel bag barriers
- Fiber rolls

b. Resource protection

Protect environmentally sensitive areas and watercourses from sediment in sheet flows by using:

- Silt fencing
- Gravel bag barriers
- Fiber rolls

c. Sediment Capture

Capture sediments in channeled storm water by using:

- Storm drain inlet protection measures
- De-silting basins (Designed in accordance with an industry standard such as the latest editions of Caltrans Construction Site BMP Manual, CASQA Stormwater Best Management Practice Handbooks, etc. If the project is one acre or greater, the desilting basin(s) must be designed in accordance with the NPDES General Construction Permit, Order No. 2009-0009-DWQ.

d. Velocity Reduction

Reduce the velocity of storm water by using:

- Outlet protection (energy dissipater)
- Equalization basins
- Check dams

e. Off-site Sediment Tracking

Prevent sediment from being tracked off-site by using:

- Stabilized construction entrance/exit
- Construction road stabilization
- Tracking control (i.e., corrugated steel panels, wheel washes)
- Dust control

7.6.3. Materials Management

a. Prevent Contamination by Waste

Prevent the contamination of storm water by wastes through proper management of the following types of wastes:

- Solid
- Sanitary
- Concrete
- Hazardous
- Equipment related wastes
- Stock piles (protection from wind and rain)

b. Prevent Contamination by Construction Materials

Prevent the contamination of storm water by construction materials by:

- Covering and/or providing secondary containment of storage areas
- Taking adequate precautions when handling materials.

7.6.4 General Construction Pollution Prevention BMPs

General pollution prevention BMPs that will be required from construction sites may include one or more of the following, depending on the nature of the activities performed at the site:

a. Review construction activities, materials storage, and waste disposal methods for ways to reduce or eliminate generation of pollutants.

b. Use less toxic alternative materials to the extent practicable.

c. Reduce waste generation through recycling and better site management methods.

d. Use dry and mechanical cleaning processes, instead of using chemicals.

e. Make routine inspection of equipment for detection of leaking or faulty parts. For washing of equipment and tools, contain and store the effluent and

dispose of it according to applicable laws and regulations. Discharge of effluent to areas draining to storm drainage systems is prohibited.

f. Minimize the use of hazardous materials.

g. Store hazardous materials in locked enclosures.

h. Keep an inventory of all hazardous materials received, used, and stored at the construction site. Order hazardous materials in quantities that will not require storage of large quantities at the site.

i. Dispose of excess hazardous materials and containers according to all applicable laws and regulations.

j. Provide adequate trash containers and receptacles at the site, and arrange for regular pickup of trash as necessary. Regularly clean trash enclosures and replace leaky or damaged trash containers with new ones.

k. Educate and train staff on pollution prevention methods and require them to implement such methods at all times.

l. Prevent contact of storm water with materials that may cause pollution of runoff from the facility.

m. Prevent non-storm water flows from the site.

n. Protect all storm drain inlets or catch basins from pollution.

o. Inspect the site on a regular basis for any leaks, potential spills, faulty equipment that may cause pollution of runoff, and repair such deficiencies immediately.

p. Sample and monitor storm water runoff for pollutants as required by the San Diego Regional Water Quality Control Board or the City of Chula Vista.

q. Plan for erosion control and sediment control in advance. Arrange for all disturbed areas to be protected during the wet season.

r. Divert flows from undisturbed areas around disturbed areas as much as possible.

s. Locate service areas and equipment storage areas away from natural or man-made watercourses.

SECTION 8. IMPLEMENTATION AND MAINTENANCE REQUIREMENTS PAGE

SECTION 8. IMPLEMENTATION AND MAINTENANCE REQUIREMENTS

After all project BMPs have been approved by the City, applicants and City project managers must ensure implementation and maintenance of the BMPs according to the processes outlined in the applicable sections for private development/redevelopment projects (Section 8.1) or public development and redevelopment projects (Section 8.2).

Non-compliance with the implementation and maintenance requirements will constitute a violation of Chapter 14.20 of the Chula Vista Municipal Code (CVMC) and will be subject to enforcement by the City.

8.1 Private Development and Redevelopment Projects

8.1.1 Permanent BMP Implementation

a. Permanent BMPs (applicable to Priority Development Projects)

Applicants proposing projects that include permanent Low Impact Development Site Design, Treatment Control BMPs, and/or Hydromodification Control BMPs shall implement all required BMPs prior to the occupancy or operation of the development project. The City will require a maintenance agreement, satisfactory to and subject to the approval of the City Engineer, in accordance with the program outlined in Section 8.3: Permanent BMP Maintenance Agreement Requirements. Prior to the issuance of any permits or approvals, the project proponent must obtain City Engineer's approval of the agreement. Permanent BMPs shall be graphically shown on the construction plans, where possible, and made a condition of the project's permit/approval. Permanent BMPs shall be inspected, maintained, repaired, or replaced, as stipulated in the maintenance agreement throughout the life of the project. An Inspection, Operation, and Maintenance Plan (IOMP), as discussed in Section 8.3.1, shall be included in the Water Quality Technical Report for the project and a copy shall be submitted to the City with the maintenance agreement. The permanent BMPs' IOMP shall also be referenced on the construction plans and made a condition of the project's permit/approval.

Non-structural permanent BMPs shall be implemented throughout the life of the project.

b. Standard Permanent BMPs (applicable to Non-Priority Development Projects)

Applicants proposing projects that include Standard Permanent BMPs (described in Section 6 of this Manual) such as Low Impact Development Site Design and/or Source Control BMPs shall implement all required BMPs prior to the occupancy or operation of the development project. Structural permanent BMPs shall be graphically shown on the construction plans, where possible, and made a condition

of the project's permit/approval. Structural permanent BMPs shall be inspected, maintained, repaired, or replaced as necessary to maintain their effective operation. An IOMP shall be attached to the construction plans and made a condition of the project's permit/approval. A maintenance agreement is not required for Non-Priority Development Projects; however, non-compliance with the requirements of the IOMP will be a violation of Chapter 14.20 of the CVMC, and subject to enforcement by the City.

Non-structural permanent BMPs shall be implemented throughout the life of the project.

The City of Chula Vista will annually require responsible parties for the maintenance of structural permanent BMPs, to send to the City certified records of inspections, maintenance, repair and replacement of their BMPs during the previous year. Responsible parties shall maintain records of all inspections, maintenance, repair, and replacement of structural permanent BMPs for at least 5 years, and provide such records to City staff when requested.

8.1.2 Construction BMP Implementation

a. Construction Projects One Acre or More

Construction storm water performance standards required by the City of Chula Vista are described in Section 7 of this Manual. Additionally, projects disturbing one acre or more are required to comply with the National pollutant Discharge Elimination System (NPDES) General Construction Permit, No. CAS000002, Order No. 2009-0009-DWQ, or re-issuances thereof. Projects proposing to disturb one acre or more shall describe all construction BMPs in a Storm Water Pollution Prevention Plan (SWPPP), prepared in accordance with the requirements of the General Construction Permit. Construction BMPs shall also be shown on the plans, where possible. Any remaining construction BMPs that cannot be shown graphically on the plans shall be either noted or stapled to the plans and made a condition of the permit.

b. Construction Projects Under One Acre

Projects proposing to disturb less than one acre shall show construction BMPs, where possible, on the construction plans. Such projects are also required to complete a Construction Storm Water Management Plan (Form 5504A). A Copy of Form 5504A can be found in Section 2 of this Manual. The Construction Storm Water Management Plan will be a part of the project submittal, and made a condition of the permit.

Construction BMPs shall be implemented and maintained throughout the construction phase of the project in such a way as to effectively minimize, to the

Maximum Extent Practicable (MEP), discharges of pollutants from the construction site. City inspectors may require additional BMPs during construction to ensure that the MEP standard is met.

8.2 Public Development and Redevelopment Projects

8.2.1 Permanent BMP Implementation

Public development projects are subject to the same permanent BMP implementation requirements as private projects. Permanent storm water requirements for public projects must be incorporated into the project design and described in a WQTR (where applicable) or Form 5501. Structural permanent BMPs shall also be described in the contract documents (plans and specifications) prior to bidding for construction contracts, or equivalent. An IOMP shall be included in the WQTR or attached to project plans. The IOMP shall identify a funding mechanism and the responsible City department for the maintenance of permanent BMPs. Public Works Inspectors shall ensure the construction of structural permanent BMPs.

8.2.2 Construction BMP Implementation

Public development projects are subject to the same construction BMP implementation requirements as private projects. Construction storm water requirements must be incorporated into the project design and described in the contract documents (plans and specifications) prior to bidding for construction contracts, or equivalent. Project managers must utilize the standard specification and describe any project specific requirements.

For projects disturbing one acre or more, City project managers must ensure that a SWPPP is included in the project documents. Alternatively, a provision shall be included in the bid documents to make the contractor responsible for the preparation of the SWPPP. The contract documents must also include the requirement for the contractor to periodically update the SWPPP throughout the construction phase of the project.

For projects disturbing less than one acre, City projects shall have a specific Construction Storm Water Management Plan (CSWMP, Form 5504B, included in Section 2 of this Manual) developed to identify construction BMP requirements prior to sending the public project contracts out to bid. The contract documents shall include a requirement for the contractor to complete and sign the CSWMP before the start of the construction, and update the CSWMP throughout the construction phase of the project.

8.3 Permanent BMP Maintenance Agreement Requirements

Private project applicants shall propose a maintenance agreement assuring all permanent BMPs will be maintained throughout the life of a project, satisfactory to the

City. See Section 8.4 for a list of potential permanent treatment BMP maintenance mechanisms, and Section 8.5 for a standard storm water management facilities maintenance agreement.

For development/redevelopment projects, the City-approved method of permanent BMP maintenance shall be incorporated into the project's permit, and shall be consistent with permits issued by resource agencies, before decision-maker approval. For projects requiring only construction permits, the City-approved method of permanent BMP maintenance shall be incorporated into the permit conditions before the issuance of any construction permits. In all instances, the applicant shall provide proof of execution of a City-approved method of inspection, maintenance, repair, and replacement before the issuance of construction approvals.

Also, in the Covenants, Conditions, and Restrictions (CC&Rs) documents, maintenance agreements, or other mechanism, the following requirements shall be included and addressed, as required by the City:

a. Include requirements for compliance with non-structural permanent BMPs.
b. Provide for long-term maintenance of structural BMPs.
c. Require future tenants or owners to comply with the Standard Urban Storm Water Mitigation Plans (SUSMP) and Numeric Sizing Criteria of the Municipal Permit, Order No. R9-2007-0001.

City project managers developing public projects that are not required to obtain permits will be responsible for ensuring that a client department approved method of storm water BMP maintenance, repair, and replacement is developed prior to the commencement of construction.

For all properties, the verification mechanism will include the project proponent's signed statement, as part of the project application, accepting responsibility for all permanent BMP inspection, maintenance, repair, and replacement.

The maintenance agreement shall include the following:

8.3.1 Inspection, Operation and Maintenance Plan (IOMP)

The applicant shall submit to the City an Inspection, Operation, and Maintenance Plan (IOMP), prepared satisfactory to the City, with the approved maintenance agreement, which describes:

a. The designated responsible party to manage the project’s permanent BMPs.
b. Employees’ training program and duties.
c. Operating schedule.
d. Inspection and maintenance frequency.
e. Routine service schedule.

f. Specific maintenance activities (including maintenance of storm drain inlet stencils and signage).
g. Copies of resource agency permits, as applicable.
h. Any other necessary activities.

At a minimum, maintenance agreements shall require the applicant to provide inspection and servicing of all structural permanent BMPs on an annual basis, or as frequently as required in the IOMP. The project proponent or City-approved maintenance entity shall complete and maintain IOMP forms to document all maintenance requirements. Parties responsible for the IOMP shall retain records of all inspections, maintenance, repair, or replacement activities for at least 5 years. These documents shall be made available to the City for inspection upon request at any time.

8.3.2 Access

As part of the maintenance mechanism selected for the development, the City will require perpetual access to structural permanent storm water management facilities on-site or off-site at any time and without prior notice for the purpose of inspection of the facilities. The grant of access shall be in a form approved by the City and shall run with the land throughout the life of the project, until such time that the storm water BMP requiring access is replaced and access is no longer needed, all to the satisfaction of the City of Chula Vista.

8.4 Potential Permanent BMP Maintenance Mechanisms

8.4.1 Private projects

Project proponents must select a permanent treatment BMP maintenance mechanism for ensuring storm water BMPs inspection, maintenance, repair, and replacement in perpetuity. The City preferred maintenance mechanisms are as follows:

a. Public Storm Water BMPs

The City may approve the following funding mechanisms:

- A Community Facilities District or other funding mechanism for public entity maintenance requested by the project proponent; or
- A Home Owners Association. In this case, the project proponent and HOA shall enter into a grant of access and maintenance agreement with and in a form acceptable to the City setting forth the terms and conditions for said maintenance.

b. Private Storm Water BMPs

The City may approve the following funding mechanism:

- A Home Owners Association ("HOA"). The HOA formulation documents, and the associated Covenants, Conditions, and Restrictions shall include the obligation of the HOA to provide for such maintenance in perpetuity; or,
- A private entity for a project that meets the definition for a Priority Development Project (see Priority Development Project definition in Section 9 of this Manual) where the project proponent requests that it be maintained by the project owner or approved private entity. In this case, the project owner shall enter into a maintenance agreement with, and in a form acceptable to, the City setting forth the terms and conditions for maintaining the proposed permanent BMPs in perpetuity; or,
- A private entity for a project that does not meet the definition of a Priority Development Project (see Priority Development Projects definition in Section 9 of this Manual). The City may allow permanent BMPs to be maintained by the property owner or approved private entity. No maintenance agreement may be required in this case. Maintenance of the proposed storm water facilities would be enforced in accordance with the applicable City of Chula Vista ordinances, policies, and regulations.

8.4.2 Lease Provisions

In those cases where the City holds title to the land in question, and the land is being leased to another party for private or public use, the City may assure storm water BMP inspection, maintenance, repair, and replacement through conditions in the lease.

8.4.3 Public Entity Maintenance

The City, in its sole discretion, may approve a public or acceptable quasi-public entity (e.g., the County Flood Control District, or annex to an existing assessment district, an existing utility district, a state or federal resource agency, or a conservation conservancy) to assume responsibility for inspection, maintenance, repair, and replacement of the BMPs. Unless otherwise approved by the City, public entity maintenance agreements shall ensure estimated costs are front-funded or reliably guaranteed (e.g., through a trust fund, assessment district fees, bond, letter of credit or similar means). In addition, the City may seek protection from liability by appropriate releases and indemnities. Permanent BMPs within the City's jurisdiction proposed for transfer to any other public entity will be subject to approval by the City before installation. The project proponent must take all steps necessary to ensure that the City is involved in the negotiation of maintenance requirements within its jurisdiction with other public entities accepting maintenance responsibilities; and, in negotiations with the resource agencies responsible for issuing permits for the construction and/or maintenance of the facilities. The City must be identified as a third party beneficiary empowered, but not obligated, to enforce any such maintenance agreement within its jurisdiction.

8.4.4 Conditional Use Permits

For discretionary projects only, the City may assure maintenance of permanent BMPs through the inclusion of maintenance conditions in the Conditional Use Permit. The City may require security in its discretion.

The City may in its discretion accept alternative maintenance mechanisms if such mechanisms are as protective as those listed above.

8.5 Standard Storm Water Facilities Maintenance Agreement

A standard “Storm Water Management Facilities Maintenance Agreement with Grant of Access and Covenants” form acceptable to the City is included in this Section. The City Engineer may at his/her sole discretion require changes to the Standard Agreement Form.

RECORDING REQUESTED BY,
AND WHEN RECORDED
MAIL TO:

CITY OF CHULA VISTA
CITY CLERK
276 FOURTH AVENUE
CHULA VISTA, CA 91910

No transfer tax is due as this is a conveyance to a public agency of less than a fee interest for which no cash consideration has been paid or received

For Recorder's Use Only

File No. _____

STORM WATER MANAGEMENT FACILITIES MAINTENANCE
AGREEMENT WITH GRANT OF ACCESS AND COVENANTS

(Insert Project Reference Numbers)

DEFINITIONS

"Agreement" means this Storm Water Facilities Maintenance Agreement with Grant of Access and Covenants.

"Best Management Practices, or BMPs" means structural or non-structural pollution prevention measures, such as site design, source control, and treatment control methods required to minimize polluted runoff from the development during the post-development phase of the project. BMPs include, but are not limited to, Storm Water Management Facilities.

"City" means the City of Chula Vista, an official of the City, or any designated staff member acting on behalf of the City. The City Council, in Resolution No. _____ dated _____, has authorized the City Engineer to sign this Agreement on behalf of the City.

"Inspection, Operation, and Maintenance Plan, or IOMP" means a description of inspection, operation, and maintenance activities and schedules required to ensure proper operation and effectiveness of the SWMFs into perpetuity, as required in the Chula Vista Development Storm Water Manual. A copy of the IOMP, as amended from time-to-time, shall be included in the Water Quality Technical Report for the project before issuance of a construction permit, and a copy shall be maintained on file with the office of the City Engineer. City may require amendments to the IOMP at its sole discretion.

"Owner" means the owner of Property signatory to this Agreement applying for a development or redevelopment project that includes permanent BMPs, and all Owner's successors in interest in Property, jointly (such as a Home Owners' Association) and/or individually.

"Property" means the property on which development is proposed, a legal description of which is attached herewith as Exhibit B.

"Responsible Party" means Owner and any other person, corporation, or legal entity accepting, in writing and in City approved form, responsibility on behalf of Owner.

"Security" means any Bond, Cash Deposit, or Letter of Credit that City may require from Owner as a result of Owner's failure to effectively maintain development's SWMFs, and is to assure the faithful performance of the obligations of this Agreement.

"Storm Water Management Facilities" ("SWMFs") means all onsite and offsite structural facilities constructed for the treatment of project's storm water runoff, proposed as part of the development project submittals, as approved by City prior to the issuance of a development permit, or as amended with City's approval after the development is complete.

AGREEMENT

This Agreement for the inspection, maintenance, and repair of certain Storm Water Management Facilities is entered into between _____ ("Owner") and City for the benefit of City, Owner, successors in interest to City or Owner, and the public generally.

Pursuant to City's urban runoff regulations, including Chula Vista Municipal Code, Chapter 14.20 (the "Storm Water Management and Discharge Control Ordinance) and the Chula Vista Development Storm Water Manual, Owner has prepared and submitted to City a Water Quality Technical Report ("WQTR"), which is on file in the office of the City Engineer. The WQTR proposes that storm water runoff from Property be detained and treated by the use of permanent SWMFs which are identified in the WQTR as Treatment Control BMPs.

The WQTR specifies the manner and standards by which the SWMFs must be inspected, maintained, and repaired in order to retain their effectiveness. City requires Owner to enter into Agreement for the installation, inspection, maintenance, and repair of permanent SWMFs prior to the issuance of construction permits by City for work on Property (Improvements). It is the purpose of this Agreement to assure that the SWMFs are inspected, maintained, and repaired by creating obligations which are enforceable against Owner. Owner hereby covenants and agrees with City as follows:

1. Maintenance of Storm Water Management Facilities. Owner shall install, inspect, maintain, repair, and replace all SWMFs for the Improvements as required by the Director of Public Works, or his/her designated representative ("Director). Maintenance shall include inspection and servicing of SWMFs on the

schedule determined necessary to ensure the SWMFs retain their effectiveness. Owner shall maintain, repair and replace the SWMFs until all obligations under this Agreement are transferred to, and assumed by, another owner or entity, satisfactory to City. Owner shall grant Responsible Party assuming any obligation under this Agreement all necessary access right. Owner shall include a copy of the Inspection, Operation, and Maintenance Plan ("IOMP") for the SWMFs in the WQTR for the project and submit a copy to City, at the time this Agreement is executed.

The IOMP shall describe employee training programs and duties, routine inspection, service and operating schedules, maintenance frequency, and specific maintenance activities. Through the IOMP, Owner may also designate a Responsible Party, satisfactory to City, to maintain the BMPs. The IOMP may be amended from time-to-time by Owner, subject to City approval. Owner shall also be responsible for amending the IOMP upon City's direction.

2. Record Keeping. The designation of a Responsible Party to maintain the SWMFs does not relieve Owner of any of the obligations or duties under this Agreement. Owner, its successors, or a designated Responsible Party, shall retain records of the IOMP and maintenance and inspection activities for at least five years. Said records shall be made available within 5 days, upon request by City.

3. Defense and Indemnity. Owner agrees to defend, indemnify, protect, and hold harmless City, its agents, officers and employees, from and against all claims, demands, causes of action, liability or loss asserted or established for damages or injuries to any person or property arising out of the installation, inspection, maintenance, repair, or replacement of the BMPs. Claims, demands, causes of action, liability or loss that arise from, are connected with, or are caused or claimed to be caused by the acts or omission of Owner, Owner's agents, officers and employees are covered.

Also covered are the claims, demands, causes of action, liability or loss arising from, connected with, caused by, or claimed to be caused by the active or passive negligent acts or omissions of City, its agents, officers, or employees which may be in combination with the negligence of Owner, its employees, agents or officers, or any third party. Owner's duty to defend, indemnify, protect and hold harmless shall not include any claims or liabilities arising from the established sole negligence or sole willful misconduct of City, its agents, officers or employees.

Owner further agrees that indemnification referred to above and the duty to defend City requires Owner to pay any costs City incurs that are associated with enforcing the indemnification provision, and defending any claims arising from the installation, inspection, maintenance, repair, or replacement of the SWMFs. If City elects, at its sole discretion, to conduct its own defense, participate in its own defense, or obtain independent legal counsel in defense on any claim related to the installation, inspection, maintenance, repair or replacement of the SWMFs, Owner agrees to pay the reasonable value of attorney's fees and all of City's reasonable costs.

4. Insurance. Owner shall maintain a policy of liability insurance, as required by and in an amount approved by, City. This policy, with City named as an

additional insured, will protect City from any potential claims, which may arise from the installation, inspection, maintenance, repair or replacement of the SWMFs.

5. Notices. Owner agrees that it shall, prior to transferring ownership of any land on which any of the SWMFs covered by this Agreement are located, and also prior to transferring ownership of any such SWMFs, provide clear written notice of the above maintenance obligations associated with that SWMF to the transferee. Owner further agrees to provide evidence that Owner has requested the California Department of Real Estate to include in the public report issued for the development of Property, a notification regarding the SWMF maintenance requirements described in this Agreement.

6. CITY's Right to Perform Maintenance. It is agreed that City shall have the right, but not the obligation, to elect to perform any or all of the maintenance activities if, in City's sole judgment, Owner has failed, after a five-day written notice (from the date of postmark or personal delivery) has been provided by City to Owner, to perform the maintenance as agreed. In cases where immediate threat to water quality is imminent, a five-day notice will not be required. If City performs any of the maintenance activities, after City has first (1) served notice to Owner in accordance with the provisions of Chula Vista Municipal Code Chapter 1.40 to perform the maintenance activities and (2) Owner has failed to do so within the reasonable time stated in City's notice, then Owner shall pay all City costs incurred in performing said maintenance activities. Owner's obligation to pay City's costs of performing maintenance activities is a continuing obligation and shall apply whether or not City has required or used all or any portion of Security provided pursuant to Paragraph 8.

7. Grant of Access. City will conduct inspections of the SWMFs from time-to-time as required by the National Pollutant Discharge Elimination System Municipal Permit, Order No. R9-2007-0001 and any re-issuances thereof, to ensure adequate maintenance and effectiveness of the SWMFs. Owner grants to City a perpetual access to the SWMFs for performing inspections or any of the maintenance activities specified in paragraph 1. City shall have the right, at any time and without prior notice to Owner, to enter upon any part of Property as may be necessary or convenient for inspection purposes. Owner shall at all times maintain Property so as to make City's access clear and unobstructed. Owner agrees to pay all inspection fees as may be established by City.

8. Security. If upon two inspections within any five-year period, City inspectors determine that Owner has failed to effectively operate, maintain, or repair the SWMFs, City may require Owner to provide City with Security to assure the faithful performance of the obligations of this Agreement. Security may be in the form of a Bond, a Cash Deposit, or a Letter of Credit in an amount equal to two-years' cost of maintaining the SWMFs, as determined in the project WQTR and adjusted at 5% per annum. City may use Security to provide funding for the cost to City to perform any of the maintenance activities for the development's SWMFs. City may use all or any part of Security at any time pursuant to this Agreement. Should any portion of Security be used by City, Owner shall deposit additional funds or provide an additional Letter of Credit to City within thirty (30) days in the amount used by City to bring the amount available back up to the amount specified. If Security is a Cash Deposit, and a

Substitute Cash Deposit or Letter of Credit is provided that is acceptable to City, any amount of the Cash Deposit not used by City shall be returned to Owner in accordance with City's accounting procedures. The Letter of Credit shall be submitted on bank letterhead using City-approved form. Once Owner has demonstrated effective operation, maintenance, and repair, as determined by City, the Security shall be kept for one year for the first occurrence, and two years for the second occurrence, after which time the Security shall be cancelled and any unused funds returned to Owner.

9. Agreement Binds Successors and Runs with PROPERTY. It is understood and agreed that the terms, covenants and conditions contained in this Agreement shall constitute covenants running with the land and shall be binding upon the heirs, executors, administrators, successors and assigns of Owner and City and shall be deemed to be for the benefit of all persons owning any interest in Property. It is the intent of the parties that this Agreement be recorded and be binding upon all persons purchasing or otherwise acquiring all or any lot, unit or other portion of Property, who shall be deemed to have consented to and become bound by all the provisions of this Agreement. This Agreement shall commence upon execution of this Agreement by all parties named in the Agreement.

10. Enforcement. Failure to comply with the terms of this Agreement constitutes a violation of the Chula Vista Municipal Code Chapter 14.20 "Storm Water Management and Discharge Control" and may result in enforcement action pursuant to City's storm water regulations and administrative procedures.

11. Governing Law and Severability. This Agreement shall be governed by the laws of the State of California. Venue in any action related to this Agreement shall be in the Superior Court of the State of California, County of San Diego, South County Division. In the event that any of the provisions of this Agreement are held to be unenforceable or invalid by any court of competent jurisdiction, the validity, and enforceability of the remaining provisions shall not be affected by the judgment.

SIGNATURE PAGE FOR
STORM WATER MANAGEMENT FACILITIES MAINTENANCE
AGREEMENT WITH GRANT OF ACCESS AND COVENANTS
(Insert Project Reference Numbers)

IN WITNESS WHEREOF, the parties have executed this Agreement on the _____ day of _____, 20__.

OWNER:

_____

By: _____

Its: _____

By: _____

Its: _____

CITY OF CHULA VISTA:

_____
City Engineer

APPROVED AS TO FORM:

_____
City Attorney

ATTEST:

_____
City Clerk

Dated: _____

(Notary to attach acknowledgment for each signature.)
(Corporate Authority required for each Signatory, if applicable.)

Attachments:

Exhibit A: Legal Description for Property

SECTION 9. DEFINITIONS

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Attached Residential Development – Any residential development in which residential units share an interior/exterior wall. This category includes, but is not limited to: dormitories, condominiums and apartments.

Automotive Repair Shop – A facility that is categorized in any one of the following Standard Industrial Classifications (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.

Best Management Practices (BMPs) – Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce, to the maximum extent practicable, the discharge of pollutants directly or indirectly to waters of the United States. BMPs also include treatment requirements, operating procedures and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. In the case of municipal storm water permits, BMPs are typically used in place of numeric effluent limits. The City of Chula Vista SUSMP (Section 3 of this Manual) groups storm water BMPs into the following categories: Low Impact Development Site Design, Source Control, Treatment Control (pollutant removal), and Hydromodification Management BMPs.

Commercial Development – Any development on private land that is not for heavy industrial or residential uses. The category includes, but is not limited to: hospitals; laboratories and other medical facilities; educational institutions; recreational facilities; municipal facilities; commercial nurseries; multi-apartment buildings; car wash facilities; mini-malls and other business complexes; shopping malls; hotels; office buildings; public warehouses; automotive dealerships; airfields; and other light industrial facilities.

Commercial Development Greater than 1 Acre – Any commercial development that results in the disturbance of one acre or more of land.

Conditions of Concern – Common impacts to the hydrologic regime resulting from development, which typically include increased runoff volume and velocity; reduced infiltration; increased flow frequency, duration and peaks; faster time to reach peak flow; and water quality degradation.

Construction Site – Any project, including projects requiring coverage under the General Construction Permit, that involves soil disturbing activities including, but not limited to, clearing, grading, disturbances to ground such as stockpiling, and excavation.

Continuous Simulation Modeling – A method of hydrological analysis in which a set of rainfall data (typically hourly for 30 years or more) is used as input, and runoff rates are calculated on the same time step. The output is then analyzed statistically for the

purposes of comparing runoff patterns under different conditions (for example, pre-and post-development-project)

Detached Residential Development – Any residential development that includes freestanding residential units. This category includes, but is not limited to: detached homes, such as single-family homes and detached condominiums.

Detention – The practice of holding storm water runoff in ponds, vaults, within berms, or in depressed areas and letting it discharge slowly to the storm drain system. See definitions of infiltration and retention for differences.

Development Projects – New development or redevelopment with land disturbing activities; structural development, including construction or installation of a building or structure, the creation of impervious surfaces, public agency projects, and land subdivistion.

Directly Connected Impervious Area (DCIA) – The area covered by a building, impermeable pavement, and/or other impervious surfaces, which drains directly into the storm drain without first flowing across permeable vegetated land area (e.g., lawns).

Direct Infiltration – Infiltration via methods or devices, such as dry wells or infiltration trenches, designed to bypass unsaturated surface soils and transmit runoff directly to deeper soil layers.

Drainage Management Area – Areas delineated on a map of the development site showing how drainage is detained, dispersed, or directed to Integrated Management Practices. There are four types of Drainage Management Areas: 1) self-treating areas, 2) self-retaining areas, 3) areas that drain to self-retaining areas, and 4) areas that drain to Integrated Management Practices. Specific criteria apply to each type of area.

Dry Season – May 1 through September 30 of each year.

Environmentally Sensitive Areas (ESAs) – Areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies (“303(d) water bodies”); areas designated as “Areas of Special Biological Significance” (ASBS) by the State Water Resources Control Board (*Water Quality Control Plan for the San Diego Basin (1994) and amendments*); water bodies designated with the RARE beneficial use by the State Water Resources Control Board (*Water Quality Control Plan for the San Diego Basin (1994) and amendments*); areas designated as preserves or their equivalent under the Multi Species Conservation Program (MSCP) within the Cities and County of San Diego; and any other equivalent environmentally sensitive areas which have been identifies by the Copermittees. Environmentally sensitive area is defined for the purposes of implementing SUSMP requirements, and does not replace or supplement other environmental resource-based terms, such as “Environmentally Sensitive Lands,” that may be employed by the City of Chula Vista in its environmental or land development review processes.

Erosion – When land is diminished or worn away due to wind, water, or glacial ice. Often the eroded debris (silt or sediment) becomes a pollutant via storm water runoff. Erosion occurs naturally but can be intensified by land clearing activities such as farming, development, road building, and timber harvesting.

Higher-Rate Biofilter – A biofilter with a design surface-loading rate higher than 5 inches per hour specified for bioretention facilities and planter boxes.

Grading – The cutting and/or filling of the land surface to a desired slope or elevation.

Hazardous Material – Any substance that poses a threat to human health or the environment due to its toxicity, corrosiveness, ignitability, explosive nature or chemical reactivity. These also include materials named by the USEPA in 40 CFR 116 to be reported if a designated quantity of the material is spilled into the waters of the U.S. or emitted into the environment.

Hazardous Waste – Hazardous waste is defined as "any waste, which, under Section 600 of Title 22 of this code, is required to be managed according to Chapter 30 of Division 4.5 of Title 22 of this code" [CCR Title 22, Division 4.5, Chapter 11, Article 1].

Hillside Development – Any development located in an area with known erosive soil conditions, where the development will grade on any natural slope that is twenty-five percent or greater.

Hillside Development Greater than 5,000 Square Feet – Any Hillside Development that would create more than 5,000 square feet of impervious surfaces.

Hydromodification – The change in the natural watershed hydrologic processes and runoff characteristics (i.e., interception, infiltration, overland flow, interflow and groundwater flow) caused by urbanization or other land use changes that result in increased stream flows and sediment transport. In addition, alteration of stream and river channels, installation of dams and water impoundments, and excessive streambed and shoreline erosion are also considered hydromodification, due to their disruption of natural watershed hydrologic processes.

Impervious Surface – Any material that prevents or substantially reduces infiltration of water into the soil.

Inactive site – Any construction site or part of a construction site on which no grading or other soil disturbing activities are conducted for 7 or more calendar days.

Infiltration – Seepage of runoff into soils underlying the site.

Integrated Management Practices – A facility (BMP) that provides small-scale treatment, retention, and/or detention and is integrated into site layout, landscaping, and drainage design.

Integrated Pest Management – An approach to pest management that relies on information about the life cycle of pests and their interaction with the environment. Pest control methods are applied with the most economical means and with the least possible hazard to people, property, and the environment.

Low Impact Development (LID) – A storm water management and land development strategy that emphasizes conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect pre-development hydrologic functions.

Maximum Extent Practicable (MEP) – The technology-based standard established by Congress in CWA section 402(p)(3)(B)(iii) that municipal dischargers of storm water discharges must meet. Technology-based standards establish the level of pollutant reductions that dischargers must achieve, typically by treatment or by a combination of source control and treatment control BMPs. MEP generally emphasizes pollution prevention and source control BMPs primarily (as the first line of defense) in combination with treatment methods serving as a backup (additional line of defense). MEP considers economics and is generally, but not necessarily, less stringent than BAT. A definition for MEP is not provided either in the statute or in the regulations. Instead the definition of MEP is dynamic and will be defined by the following process over time: municipalities propose their definition of MEP by way of their urban runoff management programs. Their total collective and individual activities conducted pursuant to the urban runoff management programs becomes their proposal for MEP as it applies both to their overall effort, as well as to specific activities (e.g., MEP for street sweeping, or MEP for MS4 maintenance). In the absence of a proposal acceptable to the Regional Board, the Regional Board defines MEP.

In a memo dated February 11, 1993, entitled "Definition of Maximum Extent Practicable," Elizabeth Jennings, Senior Staff Counsel, SWRCB addressed the achievement of the MEP standard as follows:

> *"To achieve the MEP standard, municipalities must employ whatever Best Management Practices (BMPs) are technically feasible (i.e., are likely to be effective) and are not cost prohibitive. The major emphasis is on technical feasibility. Reducing pollutants to the MEP means choosing effective BMPs, and rejecting applicable BMPs only where other effective BMPs will serve the same purpose, or the BMPs would not be technically feasible, or the cost would be prohibitive. In selecting BMPs to achieve the MEP standard, the following factors may be useful to consider:*
>
> *i. Effectiveness: Will the BMPs address a pollutant (or pollutant source) of concern?*

ii. Regulatory Compliance: Is the BMP in compliance with storm water regulations as well as other environmental regulations?
iii. Public Acceptance: Does the BMP have public support?
iv. Cost: Will the cost of implementing the BMP have a reasonable relationship to the pollution control benefits to be achieved?
v. Technical Feasibility: Is the BMP technically feasible considering soils, geography, water resources, etc?

The final determination regarding whether a municipality has reduced pollutants to the maximum extent practicable can only be made by the Regional or State Water Boards, and not by the municipal discharger. If a municipality reviews a lengthy menu of BMPs and chooses to select only a few of the least expensive, it is likely that MEP has not been met. On the other hand, if a municipal discharger employs all applicable BMPs except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit derived, it would have met the standard. Where a choice may be made between two BMPs that should provide generally comparable effectiveness, the discharger may choose the least expensive alternative and exclude the more expensive BMP. However, it would not be acceptable either to reject all BMPs that would address a pollutant source, or to pick a BMP based solely on cost, which would be clearly less effective. In selecting BMPs the municipality must make a serious attempt to comply and practical solutions may not be lightly rejected. In any case, the burden would be on the municipal discharger to show compliance with its permit. After selecting a menu of BMPs, it is the responsibility of the discharger to ensure that all BMPs are implemented."

Municipal Separate Storm Sewer System (MS4) – A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian Tribal organization, or designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) Designated or used for collecting or conveying storm water; (iii) Which is not a combined sewer; (iv) Which is not part of the Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.26.

National Pollutant Discharge Elimination System (NPDES) – The national program for issuing, modifying, revoking and reissuing, termination, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Section s 307, 318, 402, and 405 of the CWA.

Natural Drainage – A natural swale or topographic depression, which gathers and/or conveys runoff to a permanent or intermittent watercourse or water body.

Non-Storm Water – All discharges to and from a MS4 that do not originate from precipitation events (i.e., all discharges from a MS4 other than storm water). Non-storm water includes illicit discharges, non-prohibited discharges, and NPDES permitted discharges.

Parking Lot – An open area, other than a street or other public way, used for the parking of motorized vehicles, whether for a fee or free, to accommodate clients or customers, or to accommodate residents of multifamily dwellings (i.e., apartments, condominiums, town homes, mobile homes, dormitories, group quarters, etc.).

Permeable Pavement – Pavements for roadways, sidewalks, or plazas that are designed to infiltrate a portion of rainfall, including pervious concrete, pervious asphalt, unit-pavers-on-sand, and crushed gravel.

Pollutant – Any agent that may cause or contribute to the degradation of water quality such that a condition of pollution or contamination is created or aggravated. Pollutant may include, but is not limited to, solid waste, sewage, garbage, medical waste, wrecked or discarded equipment, radioactive materials, dredged soil, rock, sand, sediment, industrial waste, and any organic or inorganic contaminant whose presence degrades the quality of the receiving waters in violation of Basin Plan or California Ocean Plan standards. "Pollutant" includes, but is not limited to, fecal coliform, fecal streptococcus, enterococcus, volatile organic carbon (VOC), surfactants, oil and grease, petroleum hydrocarbons, total organic carbon (TOC), lead, copper, chromium, cadmium, silver, nickel, zinc, cyanides, phenols, and biocides.

A "Pollutant" also includes any substance defined as a pollutant under 40 CFR Section 122.2 and any contaminant, which degrades the quality of the receiving waters in violation of Basin Plan or California Ocean Plan standards by altering any of the following parameters: pH, total suspended and settleable solids, biochemical oxygen demand (BOD), chemical oxygen demand (COD), nutrients, and temperature.

Pollutants of Concern – Pollutants for which water bodies are listed as impaired under CWA section 303(d), pollutants associated with the land use type of a development, and/or pollutants commonly associated with urban runoff. Pollutants commonly associated with urban runoff include total suspended solids; sediment; pathogens (e.g., bacteria, viruses, protozoa); heavy metals (e.g., copper, lead, zinc, and cadmium); petroleum products and polynuclear aromatic hydrocarbons; synthetic organics (e.g., pesticides, herbicides, and PCBs); nutrients (e.g., nitrogen and phosphorus fertilizers); oxygen-demanding substances (decaying vegetation, animal waste, and anthropogenic litter).

Pollution – As defined in the Porter-Cologne Water Quality Control Act: "the alteration of the quality of the waters of the State by waste, to a degree that unreasonably affects

either of the following: 1) The waters for beneficial uses; or 2) Facilities that serve these beneficial uses." Pollution may include contamination.

Pollution Prevention – Pollution prevention is defined as practices and processes that reduce or eliminate the generation of pollutants, in contrast to source control BMPs, treatment control BMPs, or disposal.

Post-Construction BMPs – A subset of BMPs including structural and non-structural controls which detain, retain, filter, or educate to prevent the release of pollutants to surface waters during the final functional life of developments.

Priority Development Projects (PDPs)– New development and redevelopment project categories listed in Section D.1.d(2) of Order No. R9-2007-0001, and Section 3.1 of this Manual.

Project Footprint – The limits of all grading and ground disturbance, including landscaping, associated with a project.

Receiving Waters – Waters of the U.S.

Redevelopment – The creation, addition, and or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure, and creation or addition of impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include trenching and resurfacing associated with utility work; resurfacing and reconfiguring surface parking lots and existing roadways; new sidewalk construction, pedestrian ramps, or bike lane on existing roads; and routine replacement of damaged pavement, such as pothole repair.

Residential Development – Any development on private land that provides living accommodations for one or more persons. This category includes, but is not limited to: single-family homes, multi-family homes, condominiums, and apartments.

Retention – The practice of holding storm water in ponds or basins, or within berms or depressed areas, and allowing it to slowly infiltrate into underlying soils. Some portion will evaporate.

Sediment – Soil, sand, and minerals washed form land into water. Sediment resulting from anthropogenic sources (i.e., human induced land disturbance activities) is considered a pollutant. Order No. R9-2007-0001 regulates only the discharges of sediment from anthropogenic sources and does not regulate naturally occurring sources of sediment. Sediment can destroy fish-nesting areas, clog animal habitats, and cloud waters so that sunlight does not reach aquatic plants.

Self-retaining area – An area designed to retain runoff. Self-retaining areas may include graded depressions.

Self-treating area – A natural, landscaped, or turf area that drains directly off site or to the public storm drain system.

Site Design BMP – Also known as Low Impact Development (LID) Site Design BMP, means any project design feature that reduces the amount of impervious surfaces, disconnects impervious surfaces, reduces creation or severity of potential pollutant sources, and/or reduces the alteration of the project site's natural flow regime. Redevelopment projects that are undertaken to remove pollutant sources (such as existing surface parking lots and other impervious surfaces) or to reduce the need for new roads and other impervious surfaces (as compared to conventional or low-density new development) by incorporating higher densities and/or mixed land uses into the project design, are also considered site design BMPs.

Source Control BMP (both structural and non-structural) – Land use or site planning practices, or structural or non-structural measures that aim to prevent urban runoff pollution by reducing the potential for contamination at the source of pollution. Source Control BMPs minimize the contact between pollutants and urban runoff.

Standard Urban Storm Water Mitigation Plan (SUSMP) – A plan developed to mitigate the impacts of urban runoff from Priority Development Projects.

Storm Water – Per 40CFR 122.26(b)(13), means storm water runoff, snowmelt runoff and surface runoff and drainage.

Storm Drainage System – Municipal Separate Storm Sewer System.

Treatment Control BMP – Any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media absorption or any other physical, biological, or chemical process.

Urban Runoff – All flows in a storm drainage system and consists of the following components: (1) storm water (wet weather flows) and (2) non-storm water illicit discharges (dry weather flows).

Waste – As defined in CWC Section 13050(d), "waste includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal".

Article 2 of CCR Title 23, Chapter 15 (Chapter 15) contains a waste classification system that applies to solid and semi-solid waste, which cannot be discharged directly or indirectly to waters of the state and which therefore must be discharged to land for

treatment, storage, or disposal in accordance with Chapter 15. There are four classifications of waste (listed in order of highest to lowest threat to water quality): hazardous waste, designated waste, non-hazardous solid waste, and inert waste.

Waters of the State – Any water, surface or underground, including saline waters within the boundaries of the State [CWC section 13050(e)]. The definition of the Waters of the State is broader than that for the Waters of the United States in that all water in the Sate is considered to be a Waters of the State regardless of circumstances or condition. Under this definition, a MS4 is always considered to be a Waters of the State.

Waters of the United States – As defined in the 40 CFR 122.2, the Waters of the U.S. are defined as: "(a) All waters, which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (b) All interstate waters, including interstate "wetlands;" (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands," sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation or destruction of which would affect or could affect interstate or foreign commerce including any such waters: (1) Which are or could be used by interstate or foreign travelers for recreational or other purposes; (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (3) Which are used or could be used for industrial purposes by industries in interstate commerce; (d) All impoundments of waters otherwise defined as waters of the United States under this definition: (e) Tributaries of waters identified in paragraph (a) through (d) of this definition; (f) The territorial seas; and (g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) thorough (f) of this definition. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA."

Watershed – That geographical area which drains to a specified point on a watercourse, usually a confluence of streams or rivers (also known as drainage area, catchment, or river basin).

Wet Season – October 1 through April 30 of each year.

SECTION 10. REFERENCES

Suggested References

Reference	Website
California Regional Water Quality Control Board San Diego Region, Order No. R9-2007-0001, Waste Discharge Requirements for Discharges of Urban runoff from the Municipal Separate Storm Sewer Systems of San Diego County	http://www.swrcb.ca.gov/rwqcb9/water_issues/programs/stormwater/sd_stormwater.shtml
Countywide Model SUSMP – Standard Urban Storm Water Mitigation Plan Requirements for Development Applications (January 2, 2009)	http://www.projectcleanwater.org/pdf/susmp/final_updated_model_susmp_2009.pdf
The County of San Diego Low Impact Development Handbook; Stormwater Management Strategies . (2007)	http://www.sdcounty.ca.gov/dplu/LID-Handbook.pdf
California Stormwater Quality Association. Stormwater Best Management Practice Handbooks (2003)	www.cabmphandbooks.org
Caltrans Construction Site BMP Manual	http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm
Caltrans Treatment BMP Technology Report	http://www.dot.ca.gov/hq/env/stormwater/annual_report/2008/annual_report_06-07/attachments/Treatment_BMP_Technology_Rprt.pdf
University of Wisconsin Extension Water Resources Education Publications	http://clean-water.uwex.edu/pubs/index.htm
Application of Water Quality Engineering Fundamentals to the Assessment of Stormwater Treatment Devices (Salvia, 2000)	http://www.scvurppp-w2k.com/pdfs/9798/SC18.02finalTM.pdf
Environmental Protection Agency Low Impact Development	http://www.epa.gov/owow/nps/lid/
Design of Stormwater Filtering Systems (Claytor and Scheuler, 1996)	http://www.mckenziewaterquality.org/documents/stormwater_filtration_system_design.pdf
American Rainwater Catchment Systems Association	http://www.arcsa.org/RAINWATER-10-09.pdf
Water Conservation Alliance of Southern Arizona	http://www.watercasa.org/graywaterharvesting.php
Rainwater Harvesting for Drylands and Beyond	http://www.harvestingrainwater.com/
The Texas Manual on Rainwater Harvesting	http://www.twdb.state.tx.us/publications/reports/RainwaterHarvestingManual_3rdedition.pdf
Stormwater Management Manual (Portland, 2004)	http://www.portlandonline.com/bes/index.cfm?c=35122
Maryland, 2000. State of Maryland. Maryland Stormwater Design Manual	http://www.mde.state.md.us/Programs/WaterPrograms/SedimentandStormwater/stormwater_design/index.asp
Portland. City of Portland, OR. 2004 Stormwater Management Manual	http://www.portlandonline.com/bes/index.cfm?c=35117

Reference	Website
Prince George's County, Maryland. Bioretention Manual. Department of Environmental Resources, Environmental Services Division	http://www.princegeorgescountymd.gov/Government/AgencyIndex/DER/ESG/Bioretention/pdf/Bioretention%20Manual_2009%20Version.pdf
Washington State Department of Ecology. Stormwater Management Manual for Western Washington	http://www.ecy.wa.gov/pubs/9911.pdf
Contra Costa Clean Water Program *Stormwater C.3 Guidebook*	http://www.cccleanwater.org/Publications/Guidebook/Stormwater_C3_Guidebook_4th_Edition_9-10-08.pdf
Design of Stormwater Filtering Systems by Richard A. Claytor and Thomas R. Schueler	http://www.mckenziewaterquality.org/documents/stormwater_filtration_system_design.pdf

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Project Review & Permitting Process

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References